University of Southern Queensland
Faculty of Health, Engineering and Sciences

Development of an Asset Prioritisation Framework for Gympie Regional Council's Water and Sewerage Assets

A dissertation submitted by

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Abstract

Gympie Regional Council (GRC) have committed to improving their asset management practices and have recognised that an Asset Criticality Analysis is a key tool that can be used to prioritise and support decision making. An Asset Criticality Analysis determines a score based on an asset's consequence of failure and the probability of that failure occurring which allows ranking. This dissertation describes the development and documentation of an Asset Criticality Analysis framework customised towards GRC's Water Business Unit for application to a database of water and sewerage assets totalling $338M in value.

Consequence of failure criteria were developed in alignment with GRC's Enterprise Risk Management Framework. The consequence of failure criteria was then weighted with regards to comparative importance utilising the Analytical Hierarchy Process developed by Thomas Saaty (1980). A consequence severity scoring scale was selected, and severity definitions/guidelines established to support consistent assessment of impacts of failure. A computerised model in the form of a Microsoft Excel spreadsheet was created to allow data input, calculate criticality scoring and display results.

The framework was applied to 2681 water assets and 2045 sewerage assets which were selected from each of the common asset categories. Within the total 4726 assets considered, 4209 assets were considered to have "Low Criticality", 350 considered of "Moderately Low Criticality", 141 considered of "Moderate Criticality", 25 considered of "High Criticality" and 1 considered as of "Extreme Criticality". For the higher criticality assets, the results indicated that the framework was successful in producing scores that allowed clear prioritisation. However, many lower criticality assets that were very similar had equal scores which meant they could not be individually prioritised. This indicated that amendments to the framework are required to improve the granularity of scoring.

Noting that further development is required to improve the analysis, the results indicated that the framework was suitable for preliminary use by GRC to inform decision making and capital works budgets and prepare data collection, condition assessment and maintenance management programs.

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Nomenclature

ACA – Asset Criticality Analysis
AHP – Analytical Hierarchy Process
AMS – Assetic Asset Management System
AS – Australian Standard
CM – Corrective Maintenance
FMEA – Failure Mode and Effects Analysis
FMECA – Failure Mode and Effects Criticality Analysis
GIS – Geographical Information System
GRC – Gympie Regional Council
IIMM – International Infrastructure Management Manual
IPWEA – Institute of Public Works Engineering Australia
ISO – International Organisation for Standardization
MCDA – Multi-Criteria Decision Analysis
MDCM – Multi-Criteria Decision Making
NAMS – National Asset Management Strategy
PM – Preventative Maintenance
PdM – Predictive Maintenance
RTF – Run to Failure
SCADA – Supervisory Control and Data Acquisition
WBU – Water Business Unit
WSAA – Water Services Association of Australia

Chapter 1 Introduction

1.1 Introduction

A consistent theme in the operation of businesses and organisations with large numbers of assets is the need to implement effective asset management practices. Significant research into the management of assets has continuously developed over time with ISO 55000 Asset Management first published in 2014. The International Organisation for Standardization (ISO) (2014) suggest that some benefits of asset management include:

- improved financial performance;
- informed asset investment decisions;
- managed risk;
- improved services and outputs;
- enhanced reputation; and
- improved efficiency and effectiveness.

The management of risks and making informed asset investment decisions are key aspects of asset management as they are interlinked and have a direct impact on the positive or negative outcomes of benefits. This suggests the need for organisations to prioritise asset related investments with respect to risks using prioritisation techniques and tools.

The Institute of Public Works Engineering Australia (IPWEA) National Asset Management Strategy's (NAMS) Council (2011) advocate that by identifying critical assets and their failure modes, organisations can effectively target investigative activities (such as condition assessment), improve the efficiency of maintenance operations/planning and optimise capital expenditure planning across their asset portfolio.

Prioritisation of critical assets is particularly vital for organisations that own, operate and maintain large portfolios of infrastructure assets and provide essential services to customers. Municipal service providers such as local government Council's and service authorities are key examples of such organisations. These organisations are required to provide continuous and acceptable levels of service to stakeholders and are governed by many legislative requirements. Poor asset management practices can lead to unexpected asset failure, high capital expenditure and inefficient operations exposing the organisation to significant risks (Justin 2018).

An asset criticality analysis and prioritisation systematically identifies assets with high probability and consequence of failure and ranks them in order of criticality. This allows an organisation to make informed asset investment decisions in terms of maintenance activities, operations optimisation and capital renewals/expenditure (Park et al. 2010).

Providing drinking water and sewerage treatment services to the community involves many significant risks, which if not controlled correctly can result in severe consequences. When asset failures occur there can be significant financial and reputational loss, political and media attention, environmental and social impacts, breaches of legislation compliance and service standards and risk to public health and safety. Many failure incidents have occurred in Australia as assets built in the 20th century begin to reach the end of their useful life. A recent sewerage spill occurred in October 2018 when a Sydney Water pump station wall collapsed, discharging raw sewage into Parramatta River and causing significant environmental damage (Calderwood 2018). In April 2019, one of Adelaide's busiest roads was reduced to one lane due to a water main operated by SAWater bursting within the roadway. The

same water main experienced multiple failures along its length shortly prior to and following the event, significantly disrupting traffic and attracting negative media attention (Polychronis 2019). Both of these assets are highly critical due to the consequence of their failure on their surrounding environment. It is unknown what systems Sydney Water and SAWater have in place however an asset criticality analysis may have helped justify the allocation of resources to complete a detailed condition assessment and perform preventative maintenance or capital upgrades, potentially avoiding these events.

Figure 1-1: A burst water main causing traffic delays in Adelaide (Burton 2019)

This dissertation describes the development of an Asset Criticality Analysis framework that can be used to prioritise assets. The aim of this work to provide Gympie Regional Council (GRC) with a criticality analysis tool and methodologies supported by documented research for its water and sewerage assets. The outcomes of this research are to be further developed by GRC and used to prioritise the collection of asset data, targeting of condition assessment, development of maintenance programs and ultimately inform the capital works program each year. Further detail regarding the research objectives and methodology are provided in section 1.3.

1.2 Background

1.2.1 Idea Development

GRC's asset management practices are generally less developed than the rest of the industry, particularly the larger neighbouring Sunshine Coast Council/Unitywater and Fraser Coast Council/Wide Bay Water. Working with the challenge of limited budgets and resources, GRC's Water Business Unit (WBU) committed to a program of asset management development in 2017 including updates to asset management plans to align with ISO 55000 Asset Management, implementation of water/sewerage modelling software and procurement of a maintenance management system.

A search of the USQ Library resources identified research into an "Asset Criticality Framework" at Toowoomba Regional Council (TRC). The study by Olsen (2015) developed an asset criticality framework based on policies specific to the TRC which was then applied to water and sewerage assets to determine effective maintenance management methodologies for assets classes and prioritise maintenance of critical assets. The research was specific to TRC and utilised an existing high-quality asset data register and modelling software outputs and a maintenance management system was already in place (Olsen 2015).

The research by Olsen (2015) supported the hypothesis that the implementation of an asset prioritisation tool is essential for a water & sewerage authority to make informed decisions regarding the management of their assets and therefore vital for the WBU to implement as part of their asset management improvements.

The aim of this work was to develop a similar framework that is specific to the GRC WBU and takes into account substandard asset data quality, preliminary modelling systems and primitive maintenance management implementation.

1.2.2 Gympie Regional Council

The Gympie region is located in south-east Queensland approximately 170km north of Brisbane with an estimated population of 51,586 residents (ID Consulting 2018). The region covers 6,898 sq kms stretching between Goomeri in the west, Rainbow Beach in the east and Imbil in the south (GRC 2019). Gympie is the economic centre with agriculture, forestry and fishing the major industries in the region.

Gympie was proclaimed a municipality in 1880 and officially declared a city in 1905 (Queensland State Archives 2016a). The original City of Gympie and Shire of Widgee were amalgamated in 1993 to form the Shire of Cooloola, amalgamating again in 2008 when Kilkivan Shire, Cooloola Shire and part of Tiaro Shire became Gympie Regional Council (Queensland State Archives 2016b).

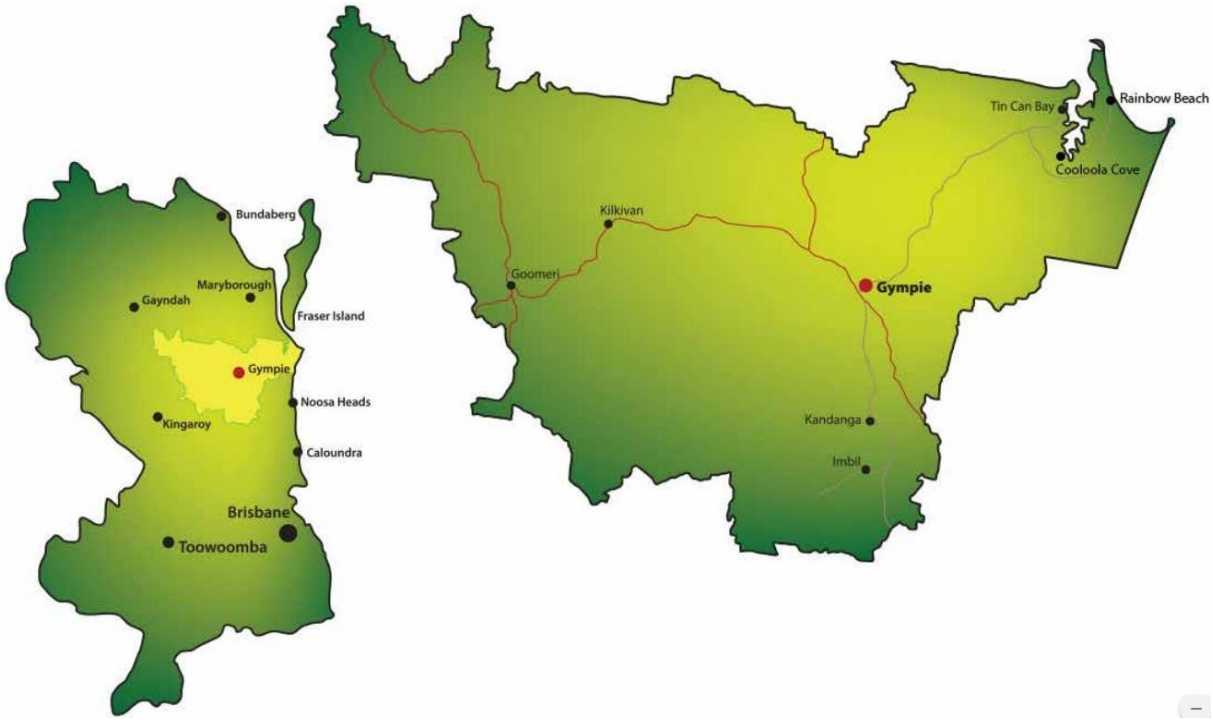


Figure 1-2: Gympie Regional Council Boundary Map (GRC 2017a)

1.2.3 Water Business Unit (WBU)

GRC's organisational structure is separated into four functional areas which provide a range of services to the Gympie region (GRC 2017b):

- Office of the CEO
- Infrastructure Services
- Planning & Development
- Corporate & Community Services

The WBU sits under the Office of the CEO and is responsible for the planning, delivery, operation and maintenance of GRC's water and sewerage assets. These assets generally include water and sewer pipeline networks, pump stations, reservoirs and treatment plants and associated infrastructure (including System Control and Advisory Data Acquisition (SCADA) assets). The approximate value of all assets owned and maintained by the WBU is $338M.

Figure 1-3: Gympie Regional Council Organisational Structure for the Water Business Unit (GRC 2017b)

Water Infrastructure

The WBU operates several water schemes across the region including the Gympie/Southside, Cooloola Cove/Tin Can Bay, Rainbow Beach, Amamoor, Kandanga, Imbil, Goomeri and Kilkivan schemes (GRC 2017c).

The scale of water supply operations is indicated by the following figures:

- Properties Serviced by Water: 14930
- Annual Drinking Water Produced: 3700ML
- Approximate Water Assets Value: $155M
- Asset Summary:
    - 8 - Water Treatment Plants
    - 3 - Raw Water Lagoons
    - 3 - Impoundment Weirs

    - 13 - Raw Water Bores
    - 19 - Drinking Water Reservoirs
    - 432km - Water Mains
- 5 - Network Booster Pump Stations

Figure 1-4: Gympie Water Treatment Plant (GRC 2017c)

Sewerage Infrastructure

The WBU operates several sewerage schemes across the region including the Gympie/Southside, Cooloola Cove, Tin Can Bay, Rainbow Beach, Imbil, Goomeri and Kilkivan schemes (GRC 2016b).

The scale of sewerage supply operations is indicated by the following figures:

- Properties Serviced by Sewerage: 12901
- Annual Sewerage Treated: 2500ML
- Approximate Sewerage Assets Value: $183M
- Asset Summary:
    - 7 - Sewerage Treatment Plants
    - 361km - Sewerage Gravity Mains
    - 61km - Sewerage Pressure Mains
    - 74 - Pump Stations

Figure 1-5: Gympie Sewerage Treatment Plant (GRC 2017c)

1.2.4 Existing Asset Management Approaches

Capital projects and maintenance activities performed by the WBU are generally reactive actions following asset failures or issues that require urgent corrective actions. There is currently very little preventative maintenance and similarly limited early corrective maintenance. This is generally referred to as the Run to Failure (RTF) maintenance method. Without a prioritisation tool it is very difficult to implement cost effective maintenance and renewals programs with a limited budget and resources. An asset criticality analysis tool will immediately identify and prioritise crucial WBU assets for asset management tasks like data collection, condition assessment, preventative maintenance and capital renewals, significantly reducing organisational risks (Covaris 2015).

1.3 Research Objectives and Brief Methodology

The purpose of this research is to provide the GRC WBU with a software tool and documented methodology to calculate an asset criticality score for all of its water and sewerage assets with key objectives as follows:

- Creation of a risk-based asset criticality score and prioritisation framework and methodologies for water & sewerage infrastructure that align with GRC WBU policies and objectives.

- Development of semi-automated Microsoft Excel software tool that dynamically calculates a criticality score based on a range of input criteria and ranks the assets by criticality

- Analysis of the results of the software tool, calibration and re-analysis

The process used to achieve these objectives is as follows:

- Perform an in-depth literature review of asset/maintenance management, failure mode identification, asset criticality analysis/prioritisation, Multi-Criteria Decision Analysis (MCDA) techniques and existing asset criticality analysis frameworks.

- Identify the asset hierarchy, groups and types as defined by WBU to assist with identification of failure modes and consequences of failure.

- Develop assessment criteria and framework based on asset failure modes and consequences of failure aligned with GRC policies. Use a MCDA methodology to apply criteria weightings to each criterion.

- Apply the analysis to a selection of assets across each asset category to test the model. Make assumptions where data is unavailable but required for the analysis. Examine results and determine differences between calculated results and expectations.

- Calibrate the model based on the initial results analysis and re-test the selection of assets. Examine results and determine differences between calculated results and expectations.

1.4 Dissertation Structure

This dissertation has been arranged into several chapters which are summarised as follows:

Chapter 1 – Introduction

This section is a brief introduction to the dissertation introducing the reader to background information on infrastructure asset management, prioritisation techniques using asset criticality, GRC and GRC's water and sewerage infrastructure assets.

Chapter 2 – Literature Review

A literature review focusing on the topics of asset/maintenance management, failure mode identification, asset criticality analysis/prioritisation, Multi-Criteria Decision Analysis (MDCA) techniques and existing asset criticality analysis frameworks was completed prior to commencing the analysis. This formed an integral part of the dissertation.

Chapter 3 – Criticality Analysis Methodology

This section describes the detailed methodology used to create the asset criticality analysis framework including discussion around asset hierarchy and grouping, potential failure modes, consequences of failure scoring, probability of failure scoring and the calculation of an overall asset criticality score.

Chapter 4 – Overview of Study Sites

This section provides a detailed description and overview of the assets selected from each asset category that the developed framework was applied to as part of this dissertation.

Chapter 5 – Application of Criticality Analysis

This section describes the processes used to apply the criticality scoring framework to passive and active asset types.

Chapter 6 – Analysis of Results
Analysis and discussion of the results obtained from the criticality analysis and resulting prioritisation.

Chapter 7 – Conclusions
Summary of key outcomes, areas for improvement and potential future work.

Chapter 8 – References
A list of references used throughout the dissertation.

Chapter 2 Literature Review

2.1 Introduction

This chapter systematically examines existing research associated with asset/maintenance management, failure mode identification, asset criticality analysis/prioritisation, Multi-Criteria Decision Analysis (MDCA) techniques and existing asset criticality analysis frameworks.

2.2 Local Government Infrastructure Asset Management Background

The Asset Management Council (2014) defines asset management as "The life cycle management of physical assets to achieve the stated outputs of the enterprise". The asset life cycle includes phases of planning, acquisition, operation and maintenance, renewal and disposal of assets (Local Government Victoria 2015). It is critical that local government organisations know the type, performance, value, and age of their assets so that they can make informed decisions regarding maintenance, renewal and replacement activities (Queensland Audit Office 2017).

This section of the review discusses the key aspects of asset management and how an Asset Criticality Analysis (ACA) tool can support these functions towards meeting the goals of the organisations.

2.2.1 Asset Management Plans

Asset management plans define the strategies, policies, procedures and operational activities necessary to realise an organization's asset management objectives (Life Cycle Engineering 2019). The preparation of asset management plans in Queensland are a legislative requirement under the Local Government Act 2009 (QLD) and Local Government Regulation 2012 (QLD) which require Council's to:

- provide strategies to ensure the sustainable management of assets listed in the organisation's asset register;
- forecast capital expenditure for renewal and upgrade of assets over a ten-year period; and
- inform the long-term financial forecast of the organisation.

The IPWEA NAMS International Infrastructure Management Manual (IIMM) covers the suggested content of asset management plans in much greater detail. Briefly, this includes strategic, tactical and operational planning components as shown in Figure 2-1.

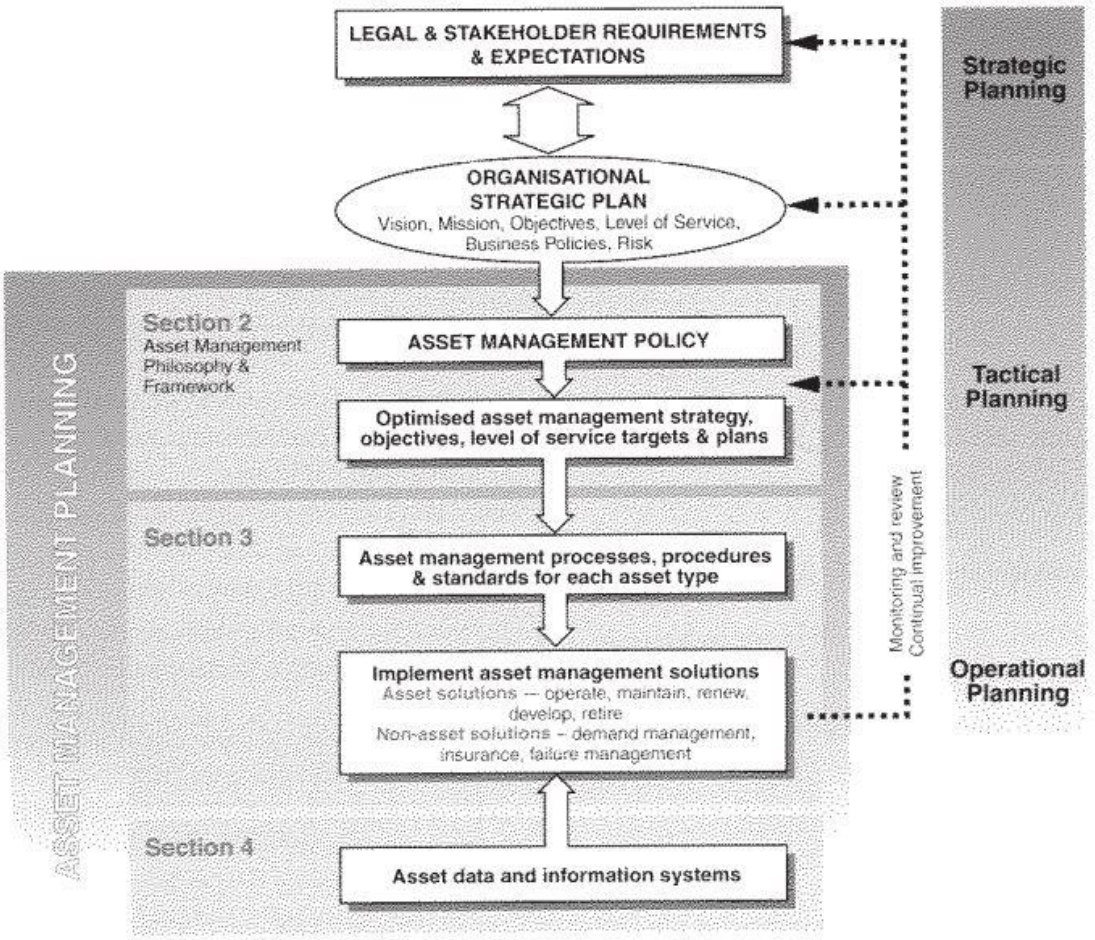


Figure 2-1: The Total Asset Management Process (IPWEA NAMS 2006a)

IPWEA NAMS (2006a) state that asset management plans should define an organisations asset management policy and align with the organisations strategic plan which is driven by stakeholder requirements and expectations. This is referred to by IPWEA NAMS (2006a) as the strategic planning component of an asset management plan which consider a 10 to 25-year financial planning horizon and defines high-level organisational level of service targets, objectives and strategies to achieve them.

The tactical planning component of an asset management plan involves the application of detailed processes, procedures and standards to develop management plans for each unique asset type (sometimes referred to as asset class plans) that allocate resources required to achieve the organisations objectives. These processes and procedures include (IPWEA NAMS 2006a):

- Managing asset information database/GIS mapping systems (asset attributes, location, condition, risks, value etc.)
- Risk identification assessment and control
- Optimised decision making
- Setting detailed management objectives including technical and stakeholder service levels, regulatory compliance and financial performance
- Asset performance and condition monitoring

Operational planning is the final component of an asset management plan and is typically a short-term plan of 1-3 years that focuses on practical achievement rather than visionary planning. IPWEA NAMS (2006a) suggest that an effective operational plan can assist with the delivery of defined levels of service efficiently, define and measure key performance indicators and promote efficient and

innovative service delivery. This component typically covers the operation and maintenance of assets with respect to (IPWEA NAMS 2006a):

- Implementation of asset solutions – operate, maintain, renew, dispose
- Implementation of non-asset solutions – demand management, insurance, failure management
- Structure, authority and responsibilities for asset management
- Personnel Resourcing – skills, experience, competence
- Stakeholder engagement/communication strategies
- Information and data control
- Emergency preparedness and response

An ACA framework is an essential component of an organisations asset management plan, policies and procedures. The tool can be used to support many aspects of an asset management plan described above including:

- Identifying assets that represent the greatest risk so that controls can be implemented by priority
- Optimised decision making for long/short planning and expenditure
- Justification of investment into the targeted collection of asset attribute and condition data to drive informed decision making
- Identification and validation of suitable and efficient maintenance strategies and prioritised implementation

2.2.2 Asset Information Database & GIS Mapping

An up-to-date asset database & GIS mapping is the foundation of all asset management practices and is critical to inform the organisations decision making processes (IPWEA NAMS 2006a). The asset data typically recorded can be summarised as:

- Unique Identification: identification number allowing tracking of the asset
- Categorisation: classing/grouping of similar assets with the aim to optimise management
- Asset attributes: description, material type, size, length, age etc.
- Financial attributes: replacement cost, depreciation, written down value (WDV) etc.
- Asset condition/serviceability: scoring of the assets physical condition and functionality to provide its intended service

The reliability of an ACA is highly dependent upon the quality and extent of available asset data. However, asset data can be complex and costly to time-effectively manage leading to a lack of resources being allocated and delays in data updates.

2.2.3 Asset Condition Assessment

Asset condition assessment data is essential for prioritising the maintenance and renewal of assets and can improve the prediction of the failure of assets, reducing risks to the organisation (IPWEA NAMS 2006a). The process typically used is the visual assessment of an asset and scoring of its condition on a 1 to 5 scale by an operator experienced with the asset. A score of 1 suggests that the asset is in very good condition, a score of 5 represents unserviceable or imminent failure and those in between represent varying levels of asset degradation (IPWEA NAMS 2006a). An example scoring guide is provided in Figure 2-2. A more detailed approach to scoring that organisations with mature asset

management practices could use is detailed in Figure 2-3. The extra granularity greatly improves the quality of the prioritisation ranking as the probability of failure is more widely distributed.

Rank	Description of Condition
1	**Very Good Condition** Only normal maintenance required
2	**Minor Defects Only** Minor maintenance required (5%)
3	**Maintenance Required to Return to Accepted Level of Service** Significant maintenance required (10-20%)
4	**Requires Renewal** Significant renewal/upgrade required (20-40%)
5	**Asset Unserviceable** Over 50% of asset requires replacement

Figure 2-2: Typical Approach to Condition Assessment Scoring (IPWEA NAMS 2006b)

Rank	Description of Condition	
3.0	Level of Service Maintenance	Minor
3.4		Average
3.8		Significant
4.0	Requires Major Upgrade	Minor
4.2		Average
4.4		Medium
4.6		Substantial
4.8		Significant
5.0	Asset Basically Unserviceable	Minor
5.2		Average
5.4		Medium
5.6		Substantial
5.8		Significant

Figure 2-3: Detailed Approach to Condition Assessment Scoring (IPWEA NAMS 2006b)

A simplified desktop method of performing this assessment considers the actual age of an asset against its design life and assigns a condition score based on remaining life. While this requires minimal data, asset degradation is not typically linear and will have several renewal interventions within its lifetime bringing it back to a higher condition (IPWEA NAMS 2006a). Assets might also operate longer than expected without degradation, continuously fail without warning, or fail unpredictably (e.g. switchboards). An example asset degradation curve is shown in Figure 2-4.

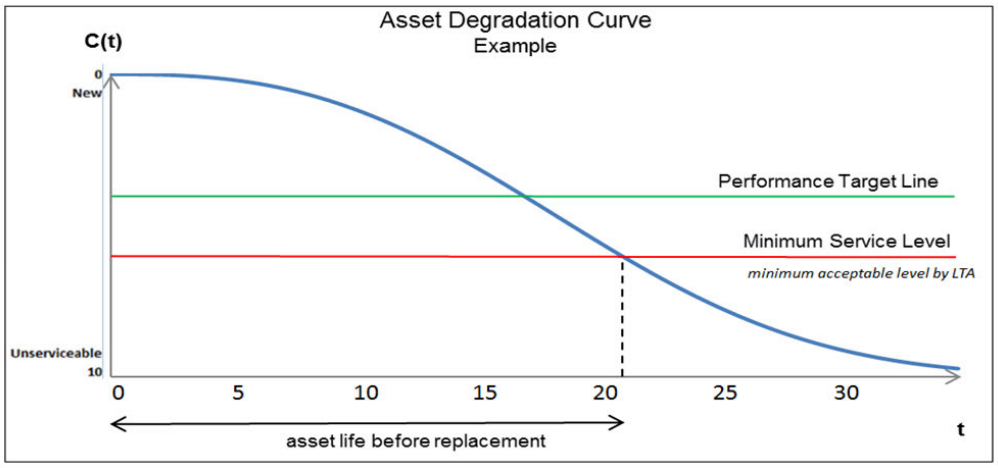


Figure 2-4: Example Asset Degradation Curve (Global Mass Transit 2018)

IPWEA NAMS (2006a) have developed frameworks for typical infrastructure assets that detail condition assessment and have advocated the importance of condition assessment as part of asset management practices in the IIMM. Other asset standard authorities like the Water Services Association of Australia (WSAA) have developed similar frameworks for water and sewerage assets such as the *WSA 05-2013 Conduit Inspection Reporting Code of Australia* standardising condition assessment of sewer mains. The key to consistent and valid condition assessment is the use of these frameworks or guidelines that set out clear descriptions that allow an inexperienced user to assess.

Asset condition assessment is critical for the incorporation of likelihood of failure into an ACA. This has been discussed in more detail in sections 2.3.4 and 2.3.5.

2.2.4 Asset Maintenance Management

There are three main approaches used in maintenance management which offer differing levels of value for money depending on the asset (Gandhare & Akarte 2012, Bevilacqua & Braglia 2000). These approaches are covered in the following sections.

2.2.4.1 Corrective Maintenance (CM)

Gandhare & Akarte (2012) define CM as a strategy when an asset is operated without maintenance until failure. This strategy is also referred to as "run-to-failure". Gandhare & Akarte (2012) and Bevilacqua & Braglia (2000) suggest that this strategy is appropriate for low cost, readily sourced/replaced, process redundant and non-critical assets where the cost of maintenance would exceed the cost to replace or repair the asset following failure.

Contrary to this, CM can also be the most in-efficient and costly form of maintenance for critical assets where their failure may cause (Mobley 2002):

- loss of ability to provide services for extended periods of time,
- domino effect of asset failures,
- increased repair times, complexity and cost,
- unavailability or delayed procurement of replacements/spares,
- stakeholder/regulatory non-compliance; and

- other undesirable impacts to the organisation.

Bevilacqua & Braglia (2000) and Bertling et al. (2005) determined that an evaluation of reliability and economic value (e.g. cost of failure, cost of preventative maintenance, cost of interruption) to determine if an asset is suitable for corrective maintenance.

An asset criticality analysis can identify low risk assets suitable for a corrective maintenance approach.

2.2.4.2 Preventative Maintenance (PM)

According to Bevilacqua & Braglia (2000) PM is based on an asset's failure mode and reliability characteristics where historic failure data suggests that a scheduled maintenance program can increase the operational time of an asset and avoid failure. This can be in the form of a periodic maintenance schedule (i.e 12-month service, 6-weekly bearing lubrication etc.), based on component usage (i.e replace pump bearings after 1000 hours as they typically fail at 1200) or other similar maintenance activities aimed toward avoiding failure by maintaining at risk components (Gandhare & Akarte 2012). The most common example of PM is servicing a car, which is typically based on a time period (e.g. 6/12 months), or usage (e.g. 15,000km intervals).

PM requires money and resources to implement and will not always prevent or even reduce the risk of asset failure. Gandhare & Akarte (2012) suggest that PM is dependent on the available data and accurate failure frequency predictions of the asset operators/maintenance personnel. There is also some inherit loss with PM as when an asset component is replaced, the remaining life of that component up to failure is lost (Mobley, 2002). As an example, replacing pump bearings at 1000 hours when they typically fail at 1200 hours is a loss of 200 hours running time without cost. On the other hand, they could also fail at 50 hours after replacement and cause unplanned asset failure which is the main risk of PM.

PM is best applied to assets with regular failure frequencies that can be prevented with maintenance. For critical assets, where asset failure and downtime results in significant impacts to an organisation the cost of asset failure can far outweigh the cost of PM and its resulting asset reliability (Bertling et al. 2005). Gandhare & Akarte (2012) note that even with a preventative approach some asset failures may occur due to uncertainty of failure frequency and random failures. For this reason, PM is not reccomended for assets that have random failure frequencies such as electrical switchboards and SCADA systems.

An asset criticality analysis can identify high to medium risk assets which can then be considered from a failure mode/frequency perspective to determine if PM is an appropriate approach.

2.2.4.3 Predictive Maintenance (PdM)

PdM is the least common approach to maintenance due to its resource and cost intensive requirements. Mobley (2002) defines PdM as an approach that uses data analysis techniques like vibration monitoring, oil analysis and thermography to detect symptoms of asset failure before they occur. This detailed monitoring allows assets to be used for as long as possible with maintenance able to be performed just prior to failure, maximising efficiency (Bevilacqua & Braglia 2000).

Mustakerov & Borissova (2013) suggest that PdM should be driven by detailed condition monitoring but acknowledge that this requires costly technologies, expert knowledge and effective

communication and analysis of data. While costly, this can enable timely decisions regarding the maintenance of critical assets.

PdM is best applied to assets that have failure modes that can be predicted, are critical for operation and where the cost of failure is significantly more than the cost of regular condition monitoring. An example of appropriate PdM is the vibration monitoring of a high- cost water treatment plant supply pump while continuous thermography of a non-critical pump would likely cost more than the cost of replacement.

An asset criticality analysis can identify high to extreme risk assets which can then be considered from an economical condition monitoring perspective to determine if PdM is an appropriate approach.

2.3 Asset Criticality Analysis (ACA)

An asset criticality analysis (ACA) is defined by Tranter (2016) as the examination of an asset to determine the consequences, probability and detectability of its failure. Typically applied to a database of assets, Covaris (2015) and Tileston (2016) define asset criticality as the scoring of an asset with respect to the consequence and likelihood of its failure when assessed against multiple weighted criteria that align with an organisations objectives and risk policies. The assessment criteria are usually customised to suit an organisation but typically include financial, environmental, health & safety, level of service/performance, political/reputation and regulatory impacts (Jafari et al. 2014). The outcome of an ACA is a unique criticality score for each asset which allows ranking of multiple assets when assessed against the same set of criteria. This ranking allows the prioritisation of critical assets (i.e assets highly likely to fail with severe consequences) over non-critical assets (i.e low probability of failure with no consequences) with respect to the objectives of the organisation (Smith & Mobley 2008).

Jafari et al. (2014) suggest that an ACA can be used to help organisations prioritise expenditure on critical assets with regards to activities such as maintenance, renewals, replacements or upgrades which have significant financial and resource impacts on an organisation. This is particularly crucial for efficient maintenance management practices like Preventative and Predictive Maintenance which are expensive to implement but are effective when applied to highly critical assets (Saarinen, Tavallaey, & Westerlund 2013).

There have been several critical asset failures that have happened in Australia that highlight the importance of performing an ACA. In 2019 at Walgett in NSW, an electrical switchboard controlling the water treatment plants water bore failed, which was the only available water source in ongoing drought conditions (Thackray 2019). This led to the water storage reservoir dropping to 25% capacity even with conserve water notification to the community and took two days to rectify. While electrical faults are hard to predict, no spare components were available on site for such a critical piece of equipment. Had an ACA been completed, this risk may have been identified and a spare component or alternative solution in place.

In 2008 at Varanus Island off the coast of WA, the key export main transferring gas over 100km to the mainland ruptured, causing an explosion within the gas production plant and significantly damaging the infrastructure (Gosch 2008). The plant was responsible for the production of over 30% of the WA state gas supply and was offline for several months, significantly affecting the WA and Australian economy and threatened the unprecedented use of emergency political powers to control the energy supply industry (Megalogenis & Tasker 2008). An investigation by the National Offshore Petroleum Safety Authority (NOPSA) (2008) found that the pipeline failed due to external corrosion caused by

ineffective anti-corrosion measures and that there was ineffective inspection and monitoring of the affected gas pipeline. In this scenario the results of an ACA could have been used to help justify investment into an inspection and maintenance program for the pipeline.

Based on the available literature reviewed, the typical process used to perform an ACA is (Atkinson 1998, Healy 2006, Press 2008):

1. Identify asset failure modes, hazards and risks
2. Determine consequences and severity of failure across a set of assessment criteria specific to the organisation
3. Determine the probability of failure occurring, utilising asset condition data where available
4. Calculation of the overall weighted criticality score with respect to the consequence and probability of failure for each criterion using a consistent methodology

Contradictory to the above, Olsen (2015) found that probability/likelihood of failure was not always considered when performing an ACA and referenced supporting literature by IPWEA NAMS (2011), Pschierer-Barnfather et al. (2011) and Chandima Ratnayake (2014).

Literature by Jaderi et al. (2014), Seifeddine (2003), WERF (2010), Shoalhaven Water (2013), Park et al. (2010), Meridium (2017) and Mierau (2014) all used risk-based processes including probability of failure as the foundation of their ACA literature and has therefore been considered further in this dissertation. An example ACA approach utilising risk-based processes is provided in Figure 2-5.

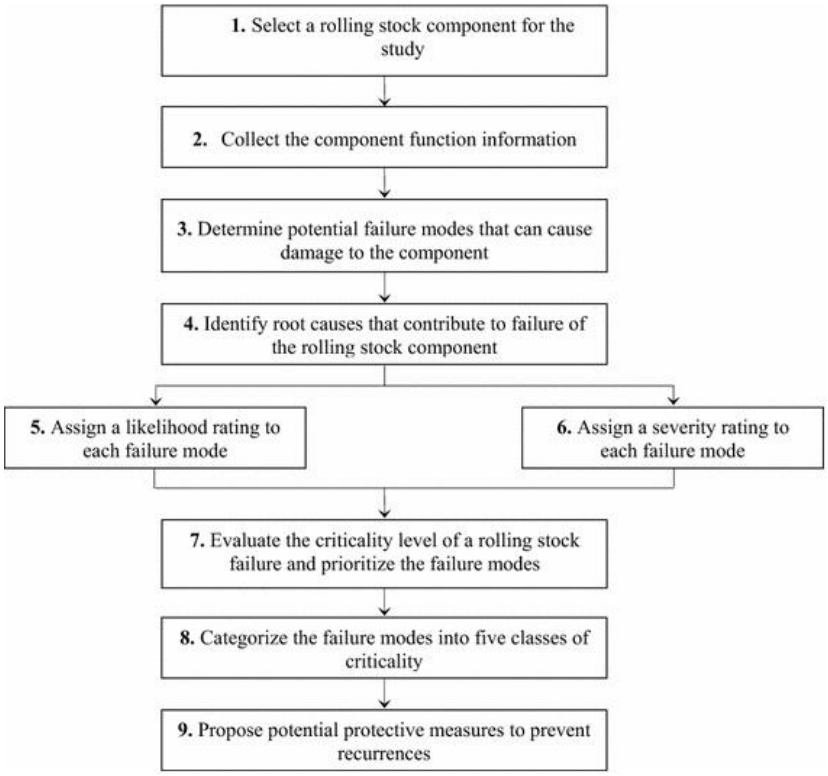


Figure 2-5: Example of Asset Criticality Assessment Process (Dinmohammadi et al. 2016)

While risk assessment appears to be a common component of an ACA, Márquez (2007) suggests that there are several sub-methodologies such as qualitative techniques, quantitative techniques, and multi-criteria decision analysis techniques that enhance the utility of the analysis. These methodologies have been discussed in more detail in the following sections.

2.3.1 Qualitative vs. Quantitative Approach

Depending on the level of data available to an organisation, a qualitative, semi-quantitative or quantitative approach may be used throughout the ACA process when assessing failure modes, consequences and severity and probability/likelihood of failure (Healy 2006, Press 2003, Minnaar et al. 2013).

2.3.1.1 Qualitative Approach

Anderson (2010) defines a qualitive approach as the collection, analysis and interpretation of data not easily translated to a number such as interview questionnaires or images. In the case of an ACA, a qualitative approach could be used when there is no available data on failure modes, impacts of failure or rates of failure (Department of the Army 2006). However, without reliable data this method relies on the experience of personnel using the assets to determine failure modes, consequences of failure and likelihood of failure. Anderson (2010) suggests that while qualitive approaches may be negatively affected by small scale data, anecdotal evidence and bias, the outcomes can also be unbiased and credible if carried out with a rigorous framework.

Atkinson (1998) found that a qualitative approach is considerably less complex than a quantitative approach while achieving similar results and was appropriate for an initial hazard identification in high risk scenarios prior to quantitative assessment. Atkinson (1998) also developed a generic methodology provided in Figure 2-6 which guides the development of a systematic framework in the approach to minimise bias and maximise credibility. Healy (2006) theorised that an initial assessment would highlight any lack of suitable data for quantitative analysis and support improved data collection practices.

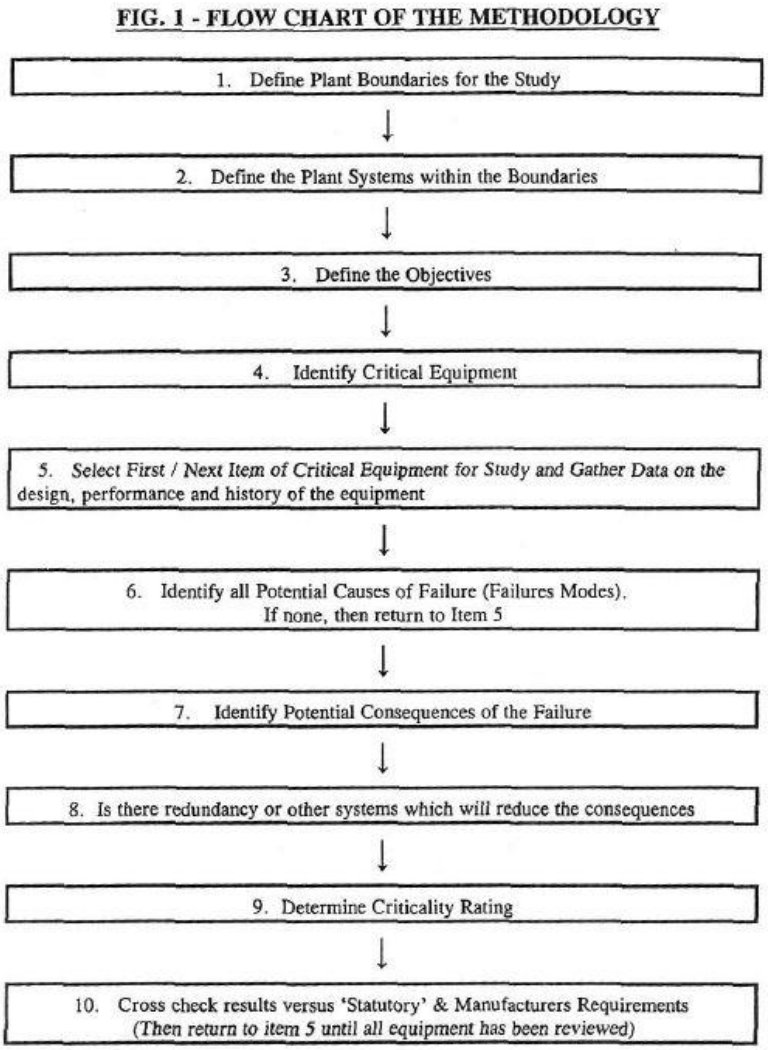


Figure 2-6: Example ACA Methodology Utilising a Qualitative Approach (Atkinson 1998)

2.3.1.2 Quantitative Approach

A quantitative approach to ACA can be used when failure modes, impacts of failure and rates of failure have been reliably recorded and are available for interrogation (Department of the Army 2006). This approach is most commonly used in factories that have large numbers of similar equipment/machinery that can be monitored for failure data. The significant disadvantage of quantitative based criticality assessment is that it requires investment into long term data collection and analysis and accurate assumptions to be reliable. Healy (2006) suggests that a quantitative approach is impractical without historic data which can be difficult to obtain and often requires pre-processing to attain a form suitable for analysis. Atkinson (1998) found that while quantitative approaches had more consistent and credible results, they were significantly more complicated and resource intensive and generally more applicable to high risk/critical asset operations.

Research by Minnaar et al. (2013) described 14 different quantitative data analysis techniques for asset management including ACA, suggesting that a quantitative approach was the most applicable to numerical based decision-making. The Mean Time Between Failure (MTBF) was one approach described that demonstrated failure patterns in historic data allowing maintenance activities to be programmed prior to predicted failure, maximising efficient and minimising asset downtime (Minnaar et al. 2013). Olsen (2015) found that the key advantage of a quantitative approach was that the results

were explicit, consistent and credible however similar to a qualitative analysis, a systematic framework should be implemented to ensure consistent data collection and calculations.

2.3.1.3 Semi-Quantitative Approach

A semi-quantitative approach utilises a mixture of both qualitative and quantitative data sources which is thought to be the most practical with reliable results if implemented with a systematic framework (Healy 2006). The key advantage of this approach it that it allows numerical historic data-based calculations to be used for relevant aspects, while qualitative techniques can also be used to translate non-numerical aspects or aspects with little to no historical data. Many organisations end up utilising this approach as their asset management maturity grows past their initial qualitative assessments (Sapori 2014).

2.3.2 ACA Step 1: Risk/Hazard Analysis

A risk/hazard analysis considers the potential failures of an asset/component producing a list of risks and their consequences (Hastings 2010). Several hazard analysis methodologies exist including (Hastings 2010):

- Hazard and Operability Analysis (HAZOP)
- Failure Mode and Effects Analysis (FMEA)
- Reliability Centred Maintenance (RCM)
- Risk Based Inspection (RBI)

Utilisation of a hazard analysis methodology is essential to consistently assess the risk of failure across an infrastructure portfolio and is crucial for an effective ACA (Atkinson 1998). Failure to identify significant risks at the start of the process could undermine the reliability of an ACA and lead to critical assets being ignored as low risk as a mode of failure hasn't been considered.

The FMEA methodology was considered the most appropriate based on GRC's scenario and has been considered in further detail due to the accessibility of its extensive implementation literature and widespread usage by organisations in asset management activities and ACA.

2.3.2.1 Failure Mode and Effects Analysis (FMEA)

A Failure Mode and Effects Analysis (FMEA) is a framework tool developed to analyse equipment failures and was one of the first techniques used as an approach to failure analysis. FMEA was originally developed by the US military for a range of uses including mission and premature equipment failure among other applications (Deighton 2016). The typical process for FMEA is for a team of technical experts or asset operators to consider every possible failure mode, the effect/consequence of the failure and single points of failure that are critical to the asset. An optional second step to perform a Failure Mode and Effects Criticality Analysis (FMECA) is done by ranking each failure mode according to its criticality when compared with other failure modes (Lipol & Haq 2011).

Lipol & Haq (2011) outline the general FMEA/FMECA methodology as involving the following steps:

- Identify potential failure modes for a product or process.
- Assess the risk associated with those failure modes and prioritize issues for corrective action.
- Identify and carry out corrective actions to address the most serious concerns.

An example FMEA assessment diagram visualising the first and second points of the methodology is provided in Figure 2-7. The list of root causes can then be assessed to determine root causes.

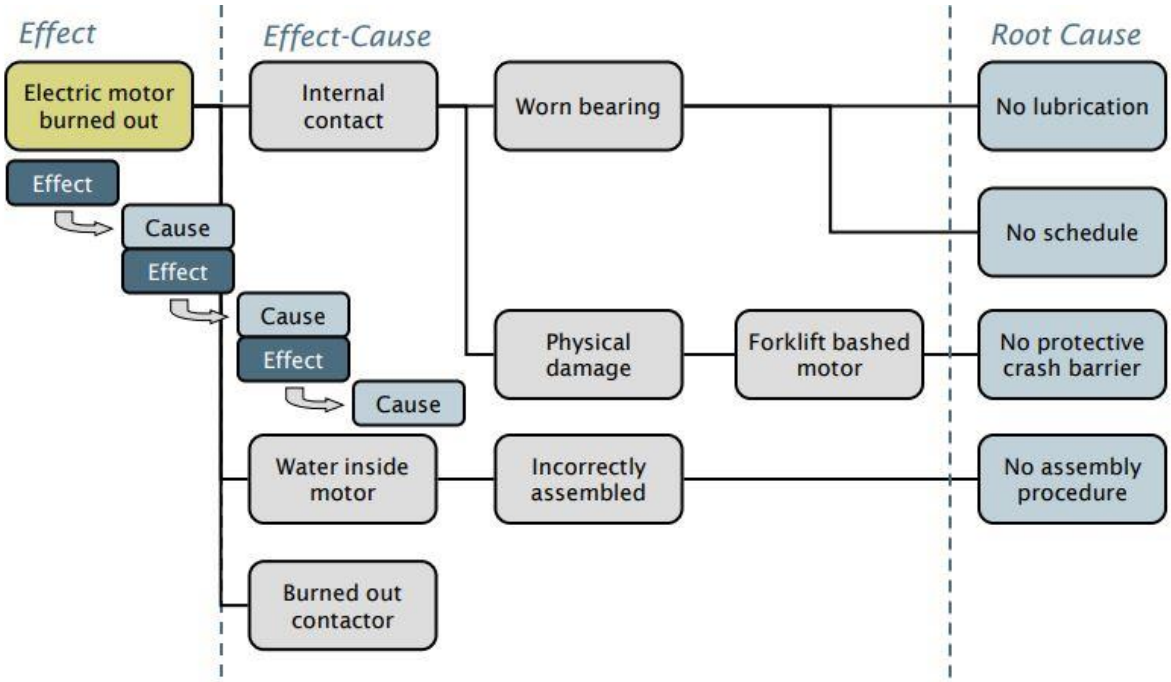


Figure 2-7: Example FMEA Process Diagram (US EPA 2016)

While FMEA and FMECA was originally intended for systems, process and design phases, it is also highly useful for the assessment of existing systems such as infrastructure assets. It provides a consistent framework to determine a comprehensive list of failure modes for an ACA and minimises human bias in the process (Lipol & Haq 2011).

2.3.3 ACA Step 2: Consequence of Failure and Severity

Following the identification of risks of failure, assessment of the consequence and severity of failure is a technique that can be used to categorise the level of risk. WERF (2010) defines consequence of failure as "the outcome of an asset failure expressed either qualitatively or quantitatively, being a loss, injury, or disadvantage from a social, economic and environmental or regulatory standpoint". The assessment criteria are typically customised to suit an organisation and the specific type of asset. The consequences are typically ranked or categorised for each criterion in terms of their severity which is defined by Ayyub (2003) as the significance or intensity of the consequence.

An example of a consequence and severity scoring table developed Capacity Infrastructure Services (CIS) (2018) (the water, sewerage and stormwater authority for Wellington City and Hutt City councils) is presented in Figure 2-8. The table defines a range of severity scores and a set of criteria specific to the organisation that are impacted as a result of the consequence. Each severity score has been descriptively or numerically defined for each criterion to ensure consistent assessment of consequences and their severity. Each criterion is scored separately (e.g. a major score in financial impact does not necessarily mean there is a major environmental impact) but there are typically some

interdependencies between them (e.g. major harm to people would directly affect the reputational score).

			IMPACT AREA				
Group	Consequence Score	Analysis Cost	Harm to People	Harm to the Environment	Service delivery	Financial Impact	Reputation and Organisational Integrity
Substantial	100	$5,800,000	Multiple deaths/permanent disabilities.	Environmental damage which takes more than 1 year to restore or is permanent	Service disruption greater than 6 hours affecting 10 - <100 residential or 2 - <10 commercial customers	>$5,000,000	Sustained national media coverage (months) or international media coverage
Major	70	$4,000,000	Death/permanent disability or multiple long-term disabilities. Area-wide serious illness	Environmental damage repaired within 6 – 12 months	Minor 3rd party business continuity issues	$3,300,000 - $5,000,000	Unfavourable national publicity Major PR control required
Moderate	40	$2,300,000	Medical attention/ hospitalisation required for several people. Isolated cases of serious illness, or system-wide cases of significant illness	Environmental damage repaired within 1 – 5 months	Service disruption greater than 6 hours affecting <10 residential or a commercial customer	$1,200,000 - $3,300,000	Unfavourable regional publicity Significant PR control required
Minor	10	$600,000	Medical attention required for several people. Hospitalisation required for some. Isolated cases of significant illness or system-wide cases of minor illness	Environmental damage repaired within 4 weeks	Reduction in levels of service >6 hours	$120,000 - $1,200,000	Local media coverage for 1-5 days. Some PR controls required
Minimal	1	$60,000	Injury requiring short term treatment/First Aid Isolated reports of minor illness	Environmental damage repaired within 7 days	Short term (<6 hours) reduction in levels of service	<$120,000	Local media coverage for 1 day
Not Applicable	0	$0	No injuries No impact on public health	No environmental impact	No impact on service delivery	No additional cost	No media coverage or adverse impact on reputation

Figure 2-8: Consequence Definition Table (CIS 2018)

Not all criteria will necessarily be considered equal by an organisation (WERF 2010). To take this into account, each criterion is typically weighted and the product of the weighted scores is considered the overall consequence of failure severity score for that asset (WERF 2010, Asset Insights 2013). Asset Insights (2013) acknowledge that the weighting of each criteria can be subjective or biased depending on the organisation and its stakeholders and is something to consider when developing the weighting. An example methodology behind the weighting of criteria is discussed further in section 2.3.6.

Huges et al. (2009) suggest that sometimes the failure of an asset may result in a range of different outcomes from minor repair, disruptive failure to catastrophic failure which is not captured by an overall score. Huges et al. (2009) note that implementing this into an ACA is more complex and suggest that an average probability of each failure mode could be used to determine the overall severity and likelihood of failure with more accurate results.

2.3.4 ACA Step 3: Probability/Likelihood of Failure

While an asset may have severe consequences if it fails, the likelihood of failure is an important factor in determining its criticality. A key example is a concrete tank structure of a reservoir with a typical design life of 100 years. While it is highly critical to the performance of the network (i.e. water storage) the chance of the asset having a major failure within the first 50-75 years is extremely low. Without considering likelihood of failure, the asset would rank highly in terms of criticality from day one and costly maintenance procedures and renewal works may be suggested without need.

WERF (2010) define the likelihood of failure as the expected possibility of failure occurring based on history or known performance of the particular asset. Huges et al. (2009) suggest that a typical assessment of likelihood of failure involves analysing the asset operators and collective industry knowledge and experience relating to degradation, failure, condition assessment and performance to define the likelihood of failure when an asset reaches a certain condition score (discussed in section

2.2.3). The resulting condition vs. likelihood of failure index provides a framework of historical fault/performance descriptions that can be used to consistently assess the likelihood of an asset failing (Huges et al. 2009). While this is considered one of the more accurate approaches it requires good quality historical data and assets that consistently fail the same way (i.e. not random) from which an asset decay or failure curve can be determined as shown in Figure 2-9. The likelihood of failure can then be predicted based on the effective life remaining or by aligning the condition score with a probability of failure as detailed in Table 2-1 (US EPA 2016).

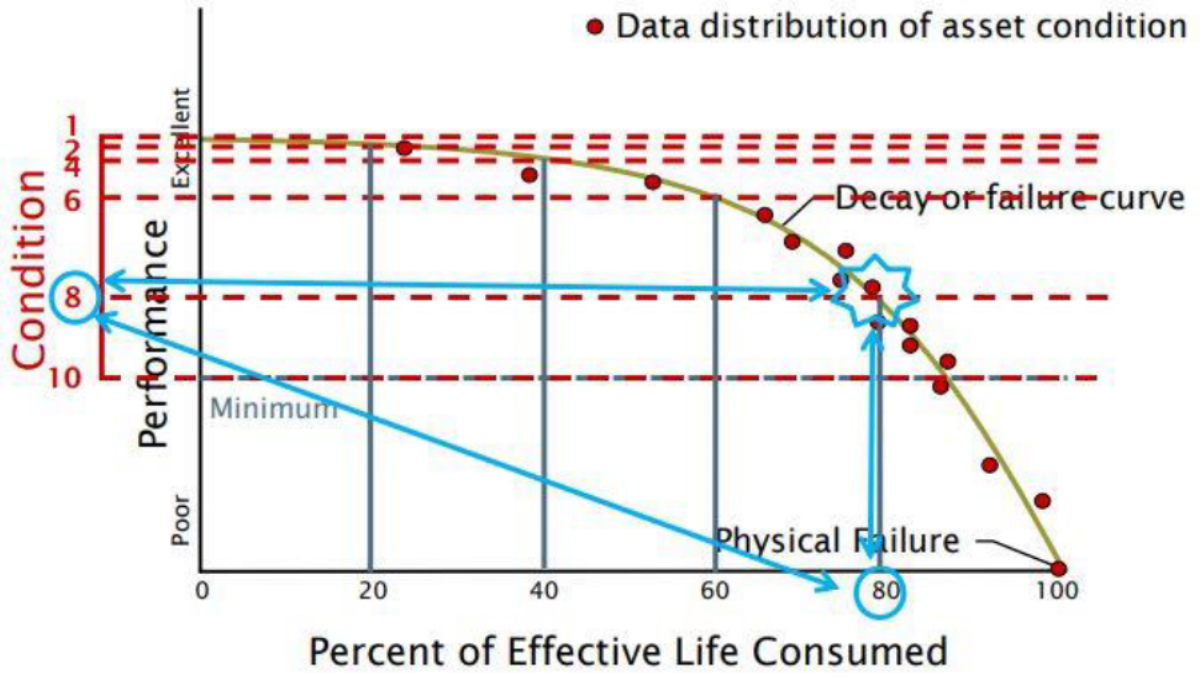


Figure 2-9: Example Asset Decay Curve and Condition Score to Determine Remaining Effective Life (US EPA 2016)

Table 2-1: Example Translation of Condition Score to Probability of Failure (US EPA 2016)

Condition Assessment Score	Likelihood of Failure Assessment	Probability of Failure (%)	Description
5	Almost Certain	100	Expected to occur within a year
-	Very High	75	Likely to occur within a year
4	High	50	Estimated 50% chance of occurring in any year
3	Quite Likely	20	Expected to occur within 5 years Estimated 20% chance of occurring in any year
2	Moderate	10	Expected to occur within 10 years Estimated 10% chance of occurring in any year
1	Low	2	Expected to occur within 50 years
-	Very Low	1	Expected to occur within 100 years

The key disadvantage to incorporating likelihood of failure into an ACA is that if asset condition is scored on a small whole number scale such as 1-5 there is insufficient granularity between the probabilities of failure (i.e. only 5 possibilities rather than up to 100). This means that when an ACA is applied to the data base, assets with similar failure modes and condition scores may score equally overall, preventing the assets from being individually prioritised.

As discussed briefly in section 2.3 and 2.5 and in contradiction of the above, not incorporating likelihood of failure can also result in similar equal asset criticality scores that prevent prioritisation of individual assets. Based on this, the ACA implementation should be a process of continuous improvement in detail over time as data collection matures and trends and patterns are identified.

2.3.5 ACA Step 4: Risk-based Criticality Analysis Methodology

Risk management has continued to grow in importance to organisations as insurance and litigation issues and liabilities become more common. The majority of mature organisations have a risk management policy which is based on the aligned Australian and International Standard AS ISO 31000 or AS/NZS 4360 (now superseded). A key section of the standard is the discussion of the risk assessment elements of identification, analysis, evaluation, treatment and monitoring (Australian Standards 2018). The risk assessment framework provides a consistent approach to the assessment of risks and development of controls to eliminate or minimise the level of risk. The process involves scoring identified risks based on the consequence and probability of them occurring before and after controls have been implemented to determine the level of residual risk (Australian Standards 2018). A tool developed to assist with the scoring is called a risk matrix with an example shown in Figure 2-10. A common usage of a risk matrix in organisations is the regulatory assessment of high-risk work activities (Queensland Government 2011). Typically risks that are still assessed as “High” even after controls have been implemented are considered unacceptable and the activity must not be allowed to occur (Gaidow & Boey 2005). In the case of asset criticality, identified risks are assets already in the field and operating which highlights the importance of implementing critical maintenance or renewal actions to reduce the assessed level of risk. By combining the risks and consequences identified in steps 1 and 2 of a typical ACA (sections 2.3.2 and 2.3.3), an assets worst failure consequence can be identified. A risk-based ACA combines an assets worst consequence with the likelihood (discussed in section 2.3.4) of that consequence occurring (Márquez 2007).

There are two key approaches to a risk-based ACA which use either quantitative or qualitative data as discussed in section 2.3.1. The quantitative approach relies on measurable consequence quantities such as cost, volumes or exceedances and a range of numerical or percentage-based likelihoods. The use of quantitative (numerical) data is less likely to be influenced by bias if used appropriately and assists with consistent assessment. The qualitative approach (words) doesn’t require any other input data but requires the assessor to be experienced and conscientiously aware of minimising bias to give accurate results. An inexperienced assessor may inadvertently under or over score a particular consequence resulting in poor confidence in the results and unrealised risks to the organisation. An example risk assessment matrix showing both approaches is shown in Figure 2-10.

POF Ranking		COF				
5	>0.1	Med-high	Med-high	Med-high	High	High
4	≤0.1	Medium	Medium	Med-high	Med-high	High
3	≤0.01	Low	Low	Medium	Med-high	High
2	≤0.001	Low	Low	Medium	Medium	Med-high
1	≤0.0001	Low	Low	Medium	Medium	Med-high
COF Ranking		A	B	C	D	E
COF Types	Personal safety	No injury	Minor injury	Major injury	Single fatality	Multiple fatality
	Environment	No pollution	Slight effect	Minor local effect	Major local effect	Significant environmental effect
	Economic loss	0~100K	100K~1M	1M~10M	10M~100M	>100M
	Impact area (m^2)	0~10	10~100	100~1K	1K~10K	>10K

Figure 2-10: Example Risk Matrix with Qualitative & Quantitative Descriptors (Zhang et al. 2017)

The key difference of a risk-based ACA is that the results are dynamic rather than static as the likelihood of failure will change with maintenance/renewal activities or updated condition assessment (WERF 2007). This greatly improves the usefulness of the criticality ranking. As risks are slowly eliminated or reduced their criticality score is also reduced and they rank lower, making a new set of assets the top priority. With unlimited time and resources this process could be repeated until a desired level of service (i.e. maximum asset condition score of 3) can be achieved and maintained (IPWEA NAMS 2006a).

The main disadvantage of this approach is that the system needs to be constantly updated with revised likelihood of failure which requires increased time, resources and budgets. Without updates assets that have since been upgraded or maintained will still be prioritised highly, reducing the usefulness of the ACA tool. Further, the accuracy of an assets probability of failure has a significant influence on the effectiveness on the ACA prioritisation. To overcome these disadvantages, the ACA is most effective as a live system where updated condition scoring is input against an asset database and ranking instantly and automatically recalculated within the system.

2.3.6 ACA Step 4: Multi-Criteria Decision Analysis Criticality Analysis Methodology

Multi-Criteria Decision Analysis (MDCA) or Decision Making (MDCM) is a group of methodologies/techniques that are used to rank the performance of alternative decision options against multiple criteria and their subjective importance to the decision maker (Pavan & Todeschini 2009, DCLG 2009). When mathematics is applied to this process, decisions that are normally intangible and subjective are able to be quantified and prioritised (Pavan & Todeschini 2009). Pavan & Todeschini (2009), DCLG (2009) and NRLI (2011) state that MDCA can be used to break down a complex problem into smaller simpler components, establishing importance or priority to rank the alternative decisions of each component before combining the results to present an overall comparison of each alternative.

There are many alternative methodologies and techniques that fall under the term of MCDA including (Kabir, Sadiq & Tesfamariam 2014, Kumar et al. 2017):

- AHP – Analytical Hierarchy Process by Saaty 1980

- ELECTRE – ELimination Et Choix Traduisant la REalite by Benayoun et al. 1966
- MAUT – Multi-Attribute Utility Theory by Edwards and Newman 1982
- PROMETHEE – Preference Ranking Organisation Method for Enrichment Evaluations by Brans and Vincke 1985
- TOPSIS – Technique for Order of Preference by Similarity to Ideal Solution by Hwang and Yoon 1981
- VIKOR – Vlse Kriterijumska Optimizacija Kompromisno Resenje by Opricovic 1998
- WPM – Weighted Product Model by Bridgman 1922
- WSM – Weighted Sum Model by Fishburn in 1967

The AHP methodology was considered the most appropriate based on GRC's scenario and has been considered in further detail due to its ease of use, extensive literature, literature accessibility and widespread usage in research (Saaty 2008).

2.3.6.1 Analytical Hierarchy Process

The Analytic Hierarchy Process (AHP) originally created by Saaty (1980) is a process used to assist with complex decision making. By reducing complex decisions to a series of pairwise comparisons, and then synthesizing the results, the AHP helps capture both subjective and objective aspects of a decision (Mocenni 2006, Márquez 2007). AHP is a methodology that can be applied when problems require consideration of both quantitative and qualitative data, which is relevant to performing an ACA (Handfield et al. 2002).

In an ACA there are many criteria that need to be considered, with some considered more important than others. The criteria considered and comparative weighting defined will always be unique to different organisations which highlights the usefulness of the AHP methodology in that it can produce a similar result (i.e. asset criticality score) with many different decisions made to get there. Along with several alternative decision-making scenarios, Bhushan & Rai (2004) state that the AHP is appropriate to be used for prioritisation of alternatives which aligns with the goals of an ACA.

Saaty (2008) defined the AHP in four broad steps which have been considered with respect to performing an ACA:

1. *Define the problem and determine the kind of knowledge sought (i.e. goal, objective).*

   While it may be considered an obvious step, the importance of setting a clear achievable goal can't be dismissed and is generally the key to most successful research. For an ACA in the context of infrastructure assets, the goal would be to determine a numerical score for each asset that allows them to be ranked and prioritised in terms of criticality to the organisation.

2. *Structure the decision hierarchy from the top with the goal of the decision, then the objectives from a broad perspective, through the intermediate levels (criteria on which subsequent elements depend) to the lowest level (which usually is a set of the alternatives).*

   The AHP requires that a hierarchy of criteria and sub criteria are defined that are relevant to achieving the goal. Saaty (1980) suggested that one way to develop the hierarchy is to work down from the goal as far as possible, and then back up from the alternatives until links and relationships are made in such a way that comparisons can be made. Bhushan & Rai (2004) developed a diagram (see Figure 2-11) to visualise these relationships and demonstrate how each alternative is considered against each criteria to achieve the goal.

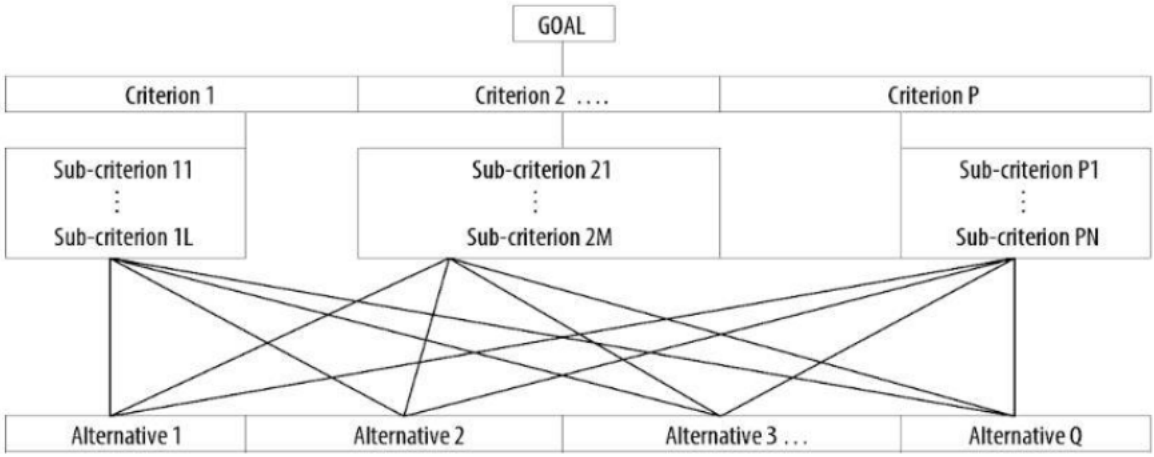


Figure 2-11: "Figure 2.1 Generic hierarchic structure" (Bhushan & Rai 2004)

Examples of the criteria that would be considered in an ACA are discussed in section 2.3.3. The main criteria would generally align with the broad risk management objectives of an organisation such as financial, environmental or reputational impacts. A number of sub-criteria would be defined to appropriately cover each main criterion in detail such as separating asset repair cost and third-party losses under financial impacts. Further sub-sub-criteria can also be defined as appropriate.

Once the criteria are defined, a range of alternatives can then be considered against the same set of criteria to determine a comparative outcome. Examples of alternatives that would be considered in an ACA could be types of assets such a pumps and switchboards or even individual assets as shown in example Figure 2-12.

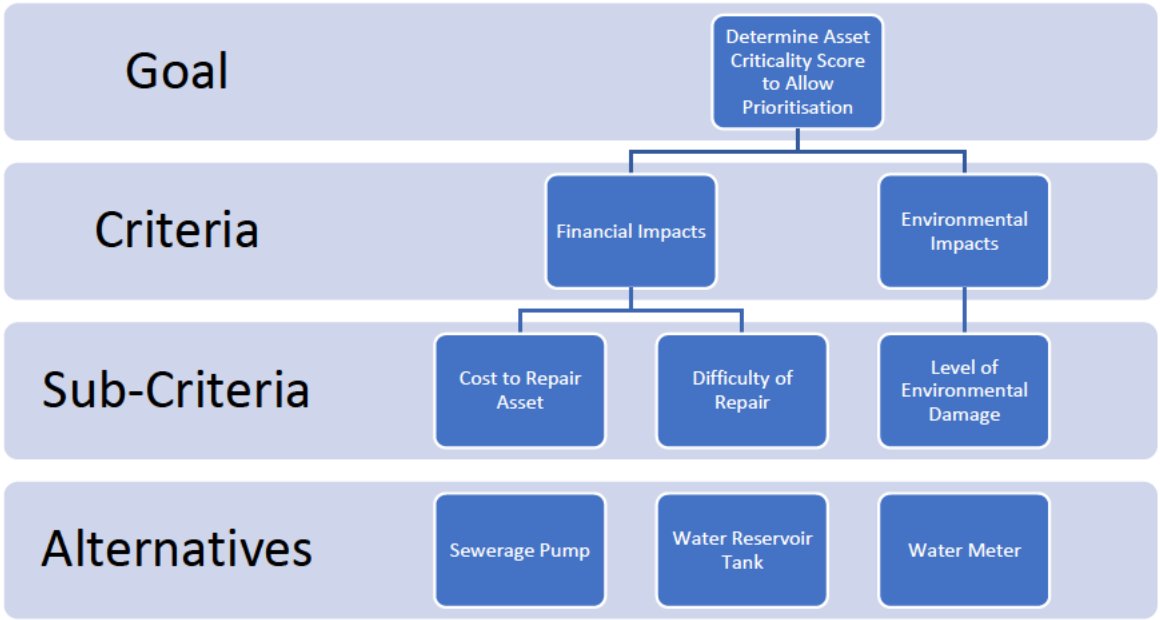


Figure 2-12: Example of AHP Hierarchy applied to an ACA

3. *Construct a set of pairwise comparison matrices. Each element in an upper level is used to compare the elements in the level immediately below with respect to it.*

Once the hierarchy is defined, it is clear there are a number of criteria to consider and decisions to make. Bevilacqua & Braglia (2000) state that pairwise comparisons allow the analysis of only two factors at once which greatly simplifies the decision-making process. The criteria are considered in a series of pairwise "judgements" to determine how many times more important or dominant one element is over another (Saaty 2008). Saaty (2008), Bhushan & Rai (2004) and Márquez (2007) agree that this should be done using a scale between equal importance and extreme importance and assigning numerical scoring of 1 to 9 to facilitate matrix calculations with the results. The scale defined by Saaty (2008) is provided in Figure 2-13.

Intensity of Importance	*Definition*	*Explanation*
1	Equal Importance	Two activities contribute equally to the objective
2	Weak or slight	
3	Moderate importance	Experience and judgement slightly favour one activity over another
4	Moderate plus	
5	Strong importance	Experience and judgement strongly favour one activity over another
6	Strong plus	
7	Very strong or demonstrated importance	An activity is favoured very strongly over another; its dominance demonstrated in practice
8	Very, very strong	
9	Extreme importance	The evidence favouring one activity over another is of the highest possible order of affirmation
Reciprocals of above	If activity *i* has one of the above non-zero numbers assigned to it when compared with activity *j*, then *j* has the reciprocal value when compared with *i*	A reasonable assumption
1.1–1.9	If the activities are very close	May be difficult to assign the best value but when compared with other contrasting activities the size of the small numbers would not be too noticeable, yet they can still indicate the relative importance of the activities.

Figure 2-13: Example Pairwise Comparison Judgement Scale (Saaty 2008)

With respect to an ACA each set of two or more criteria/sub-criteria would be judged in pairs. Referring to Figure 2-12 and Figure 2-13, environmental impact may be considered strongly more important financial impact and therefore might receive a pairwise judgement score of 5. Conversely, financial impact would receive a pairwise judgement score of 1/5 when considered against environmental impact. This process results in a $n \times n$ matrix A when n is the number of criteria being compared (Saaty 1980, Mocenni 2006).

4. *Use the priorities obtained from the comparisons to weigh the priorities in the level immediately below. Do this for every element. Then for each element in the level below add its*

weighed values and obtain its overall or global priority. Continue this process of weighing and adding until the final priorities of the alternatives in the bottom most level are obtained.

Once the matrix A is defined, a normalised pairwise comparison matrix A_{norm} is determined by making the sum of each column equal to 1 as described in Equation 1 (Saaty 1980, Mocenni 2006).

$$\bar{a}_{jk} = \frac{a_{jk}}{\sum_{l=1}^{n} a_{lk}} \quad \text{(Equation 1)}$$

Where:
n *= the size of the matrix (i.e.* $n \times n$*)*
a_{jk} *= the* j^{th} *x* k^{th} *entry in the matrix* A
a_{lk} *= the sum of* a_{jk} *for each* k^{th} *column*
$\bar{a}_{jk}$ *= the* j^{th} *x* k^{th} *normalised entry in the matrix* A_{norm}

The criteria weight vector w_j of the matrix is the numerical relationship or priority of each criteria with respect to the others determined by Equation 2 (Saaty 2008, Mocenni 2006).

$$w_j = \frac{\sum_{l=1}^{n} \bar{a}_{jl}}{n} \quad \text{(Equation 2)}$$

Where:
n *= the size of the matrix (i.e.* $n \times n$*)*
$\bar{a}_{jl}$ *= the sum of* a_{jl} *for each* j^{th} *row*
w_j *= the criteria weight vector*

The AHP also utilises a technique called a Consistency Index (CI) to check the consistency of the pairwise comparison judgments made. This helps to avoid scenarios where the first element is judged more important than the second, the second more important than the third, but the third judged more important than the first (i.e. inconsistent with other judgements) (Saaty 1980, Mocenni 2006). Saaty (1980) proved that for a consistent reciprocal matrix, the largest eigen value is equal to the size of the matrix (i.e $\lambda_{max} = n$ and $CI = 0$). Equation 3 uses this theory to determine how close the matrix is to being consistent.

$$CI = \frac{\lambda_{max} - n}{n-1} \quad \text{(Equation 3)}$$

Where:
λ_{max} *= the maximum eigen value*
n *= the size of the matrix (i.e.* $n \times n$*)*
CI *= Consistency Index*

The Consistency Ratio (CR) is then determined as shown in Equation 4 by dividing CI by a constant Random Consistency Index (RI) detailed in Table 2-2 (Saaty 1980). Saaty (1980) stated that a CR

should be less than 10% to be considered consistent, otherwise the pairwise judgements should be revised until consistency is achieved.

$$CR = \frac{CI}{RI} \qquad \text{(Equation 4)}$$

Where:
CI = Consistency Index
RI = Random Consistency Index
CR = Consistency Ratio

Table 2-2: Random Consistency Index (RI) (Saaty 1980)

n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49

While checking the consistency of each new matrix, the priority is determined for each set of criteria and sub-criteria which are then weighted with their parent criteria priority to obtain their global priority weighting (Saaty 1980, Mocenni 2006).

Applied to an ACA, the severity score of each criterion for one alternative would then be multiplied by its global priority weighting and summarised to determine its overall criticality score. Repeating the process would result in a range of comparative scores for each alternative.

The outcome of the AHP process is that each criterion can be scored on a simple 1-5 scale for each alternative and with the results mathematically combined and synthesised, determine an overall score based on the comparative importance of each criterion. This greatly simplifies the complexities of an ACA and provides a robust methodology for consistent application.

While the AHP simplifies decision making, Mocenni (2006) found it can also be calculation intensive providing the example that when comparing 10 alternatives across 4 criteria, 180 pairwise comparisons are needed to build the score matrix. This is no longer a significant issue as modern computer technology can instantly calculate large amounts of data following an initial configuration.

Karthikeyan et al. (2016) considered the strengths and weaknesses of the AHP in research and found literature that suggested the key disadvantages of the AHP related to the rank reversal phenomenon, limited pairwise judgement scale and human bias.

The rank reversal phenomenon as described by Bhusan & Rai (2004) is when a criteria or alternative is introduced or removed, causing existing scoring/ranking to become incorrect as they haven't considered the new or removed criteria. While this is an inconvenience, a robust implementation should avoid the need to make constant changes and the rank reversal can be overcome by re-considering all alternatives against the modified set of criteria.

Holder (1990) believed the judgement scale was inappropriate as it was limited to a judgement scale of 1-9, whereas an element may be more important by a factor greater than 9 (i.e. 15). While this appears to be a valid assessment, any external scale desired could effectively be normalised to a scale of 1-9 and have the same result.

Karthikeyan et al. (2016) summarised that the literature review suggested that the pairwise judgements are specifically subject to the past experience of the judgement decision maker and are ultimately subject to inadvertent flawed bias. This highlights the need for judgements to be made by a panel of experts where possible and peer reviewed to minimise impacts of bias. While this can be seen negatively, it also allows an organisation to truly customise the results to suit their beliefs and requirements.

Overall the AHP approach appears to be a suitable approach to performing an ACA with few disadvantages that can be controlled with proper consideration.

2.4 Existing Criticality Analysis Frameworks

While performing the literature review several existing water and sewerage ACA frameworks for various organisations were identified including the framework that developed the idea for this dissertation. The implementation and general structure of these frameworks have been considered in the development of this dissertation's ACA framework.

- Development and Execution of Asset Criticality Framework: A Study of Water and Wastewater Infrastructure at Toowoomba Regional Council by Olsen 2015
- Asset Management Plan - Water Supply by Shoalhaven Water 2013
- Risk-Based Asset Prioritization of Water Transmission/Distribution Pipes for the City of Tampa by Park et al. 2010
- Use of Criticality and Risk to Identify Wellington Region's Key Three Water Assets by Capacity Infrastructure Services (CIS) 2018

2.5 Areas of Controversy

Following an extensive literature review it is clear that there are multiple approaches to performing an asset criticality analysis but the approaches generally follow a similar process as discussed in section 2.3 (Atkinson 1998, Healy 2006, Press 2008). The key controversy in available literature is whether the probability of failure should be considered (i.e. risk-based criticality) or not (i.e. consequence-based criticality) in an ACA. This was clear in the abundance of literature for determining consequence-based criticality for assigning appropriate approaches to maintenance management in large factories/industries and limited literature regarding risk-based ACA for infrastructure assets.

As discussed in section 2.3, Olsen (2015) found that probability/likelihood of failure was not always considered when performing an ACA and referenced supporting literature by IPWEA NAMS (2011), Pschierer-Barnfather et al. (2011) and Chandima Ratnayake (2014). Based on these findings, Olsen (2015) developed a static consequence-based ACA and did not consider probability of failure. Contradicting this, literature by Jaderi et al. (2014), Seifeddine (2003), WERF (2010), Shoalhaven Water (2013), Park et al. (2010), Meridium (2017) and Mierau (2014) all used risk-based processes including probability of failure as the foundation of their ACA literature. Due to the dynamic prioritisation capabilities of a risk-based ACA this has been used in the framework developed by this dissertation.

This uncertainty around the inclusion of probability of failure appears to be due to:

- Lack of clear definition, standard and methodology specifically for performing an ACA
- Adaptation by organisations to suit their specific objectives, risks and requirements
- Different objectives in what is desired as an outcome. For example, some organisations may only require consequence-based criticality to set broad policies and guidelines (i.e.

maintenance types) and others may want prioritisation of each individual assets according to risk-based criticality.

2.6 Chapter Summary

This chapter systematically examined existing literature and background information associated with asset/maintenance management, failure mode identification, asset criticality analysis/prioritisation, Multi-Criteria Decision Analysis (MDCA) techniques, existing asset criticality analysis frameworks and areas of controversy.

Four broad steps to performing an ACA were identified that were consistent across literature reviewed and scrutinized in detail throughout the chapter:

1. *Identify asset failure modes, hazards and risks*

   Several methodologies for failure mode identification and risk assessment essential to perform this step were identified in literature with FMEA methodology being considered in detail.

2. *Determine consequences and severity of failure across a set of assessment criteria specific to the organisation*

   Consequence and severity scoring approaches identified were generally consistent in using a qualitative or quantitative matrix format however the assessment criteria developed was always unique due to its specific adaptation to an organisation or usage.

3. *Determine the probability of failure occurring, utilising asset condition data where available*

   While literature talked about the advantages of incorporating probability of failure in an ACA, limited approaches and methodologies were identified to convert asset condition data into a probability of failure scoring. This is an area that could be considered in future research.

4. *Calculation of the overall weighted criticality score with respect to the consequence and probability of failure for each criterion using a consistent methodology*

   The majority of literature used score weighting techniques to obtain more accurate results. Multiple MCDA techniques were identified with the AHP methodology considered in more detail based on its applicability to weighting scoring according to criteria importance.

Chapter 3 Criticality Analysis Methodology

3.1 Introduction

A robust supporting framework and methodology is essential to ensuring consistent and reliable results. The following steps taken, and processes used were generally in alignment with existing Criticality Analysis frameworks reviewed as part of Chapter 2. In this chapter the following aspects are discussed:

- Available data sources
- Identification of asset classes and categories specific to GRC
- Determination of asset failure modes and effects using a high level Failure Modes and Effects Analysis (FMEA)
- Development of consequence criteria based on identified asset failure modes
- Development of Consequence of Failure criteria and weightings aligning with GRC's Risk Management Framework and utilising the Analytical Hierarchy Process (AHP)
- Development of Consequence of Failure severity scoring definitions for each criteria
- Development of Probability of Failure scoring definitions based on asset condition data or asset age
- Development of Overall Asset Criticality Score based on Consequence of Failure and Probability of Failure
- Creation of a semi-automated spreadsheet calculation tool to process large numbers of assets and generate both a Consequence of Failure Score and a risk based Overall Criticality Score, allowing prioritisation

3.2 Available Data Sources

The quality and availability of asset management data sources is critical for the development of an ACA framework. Without considering available input data and output format requirements the framework will be unusable. GRC utilise and maintain several software systems for asset management purposes which include:

- Assetic Asset Management System (AMS)
- Intramaps/MapInfo/QGIS Geographic Information Systems (GIS)
- ClearSCADA and Citect Supervisory Control and Data Acquisition (SCADA) systems

Each source has different levels of quality, accessibility and usability for the purposes of this study. A short summary and description of each system has been provided in the following sections.

3.2.1 Assetic AMS

Assetic is the asset management software used by GRC which includes data register, financial valuation and maintenance management components and integrates with the GIS to show assets spatially. The data register contains unique entries for each asset which records the details and history of current and disposed assets in terms of attributes and financial valuation. The maintenance management component was in the process of being procured at the time of this report and was therefore not able to be used to determine historic failure and maintenance data.

For the purposes of the ACA, the data register was used as the foundation input data and drove the output format. The financial valuation information was also used to assist with measuring consequence severity as discussed in section 3.6.

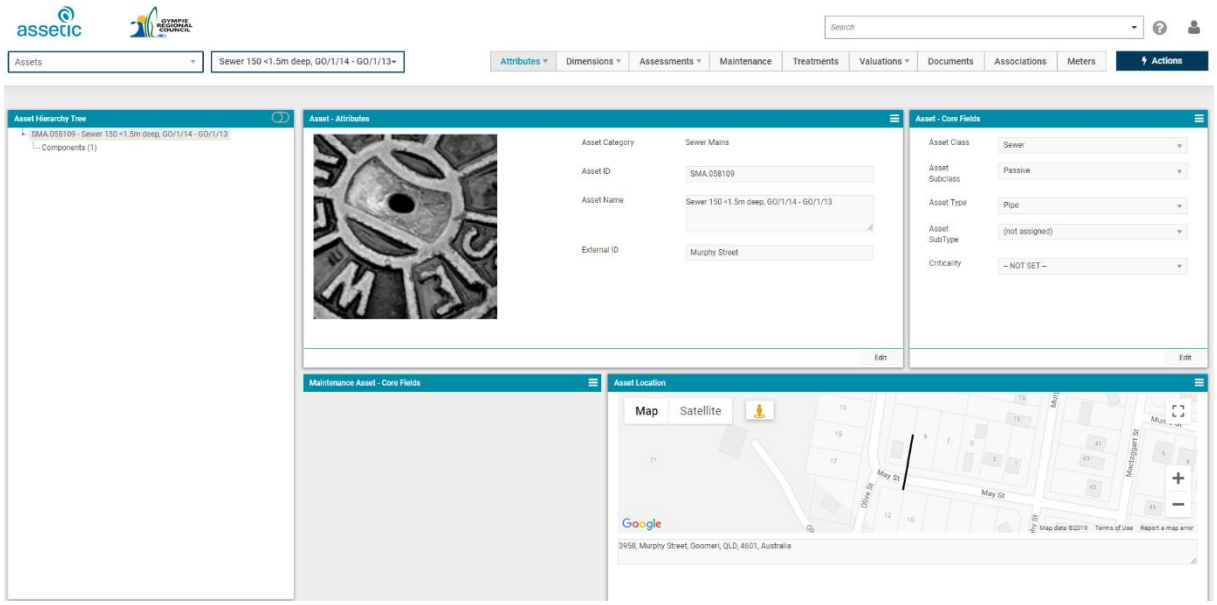


Figure 3-1: Assetic AMS User Interface

3.2.2 IntraMaps/MapInfo/QGIS GIS

IntraMaps is a GIS user interface software used by GRC to provide access to spatial data to its employees, consultants, developers and the general public. MapInfo is a GIS backend software which is used by GRC to maintain the database that holds asset and spatial data. Due to the cost of MapInfo licences and accessibility outside of GRC the freely available QGIS GIS software has been used.

For the purposes of the ACA, QGIS allows the execution of spatial queries and investigation such as determining proximity of assets to sensitive environmental areas which is a very long and time-consuming process if completed manually.

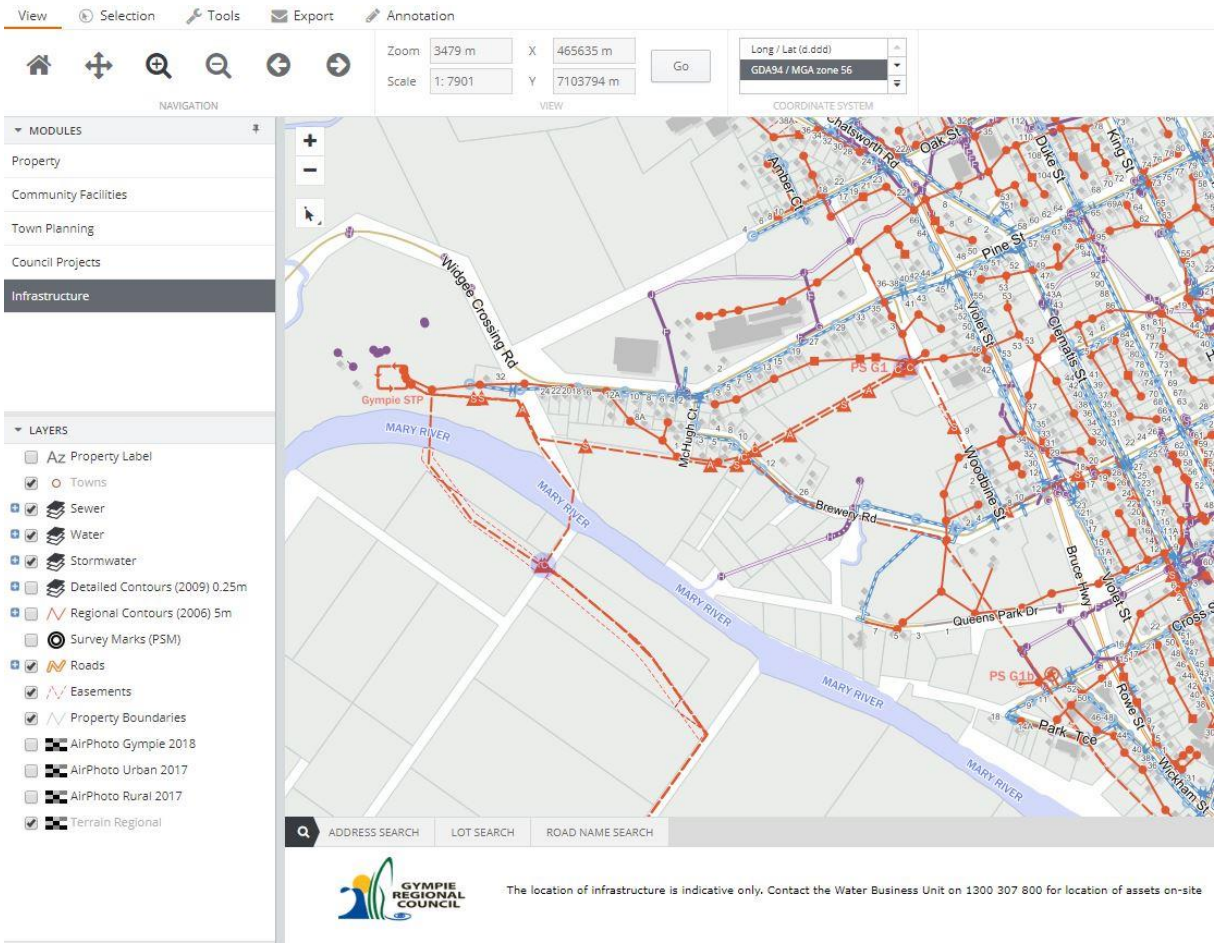


Figure 3-2: IntraMaps User Interface

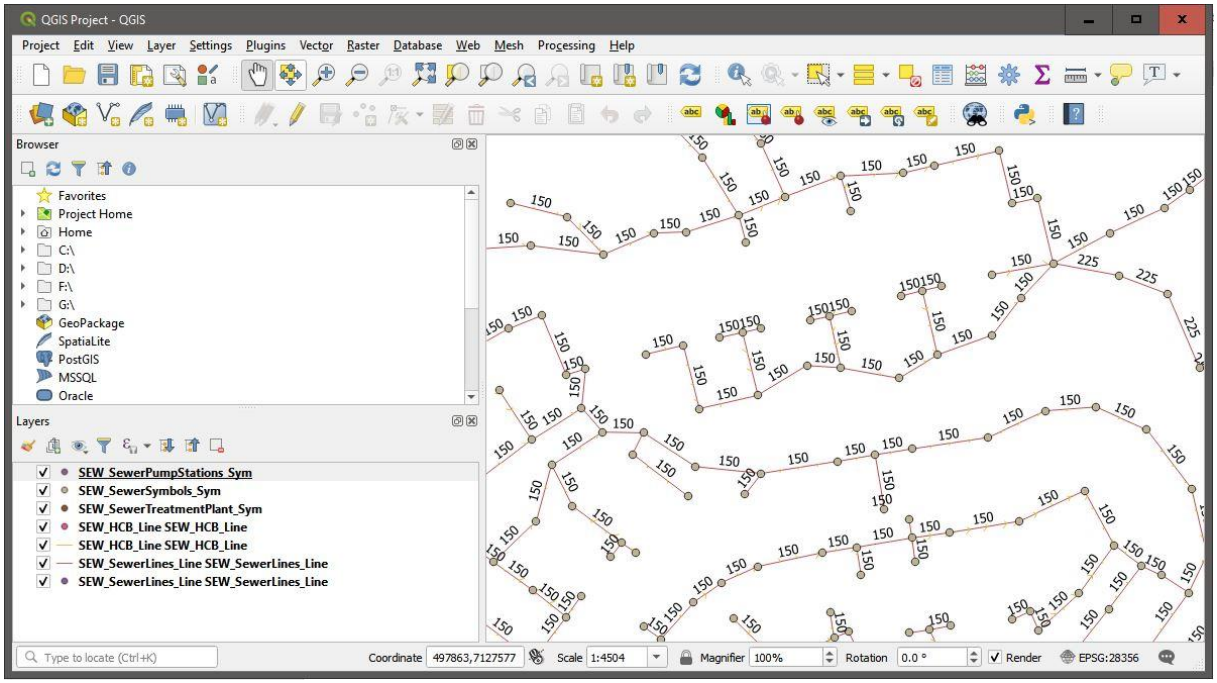


Figure 3-3: QGIS User Interface

3.2.3 SCADA Systems

GRC uses several different SCADA systems including ClearSCADA and Citect with all systems progressively being upgraded to ClearSCADA. The SCADA systems are used by GRC to monitor assets for issues and failures and remotely operate assets where required. Access to SCADA data was unable to be obtained for the purposes of this dissertation due to accessibility and time constraints but is noted as a critical source for quantitative failure data as part of future study.

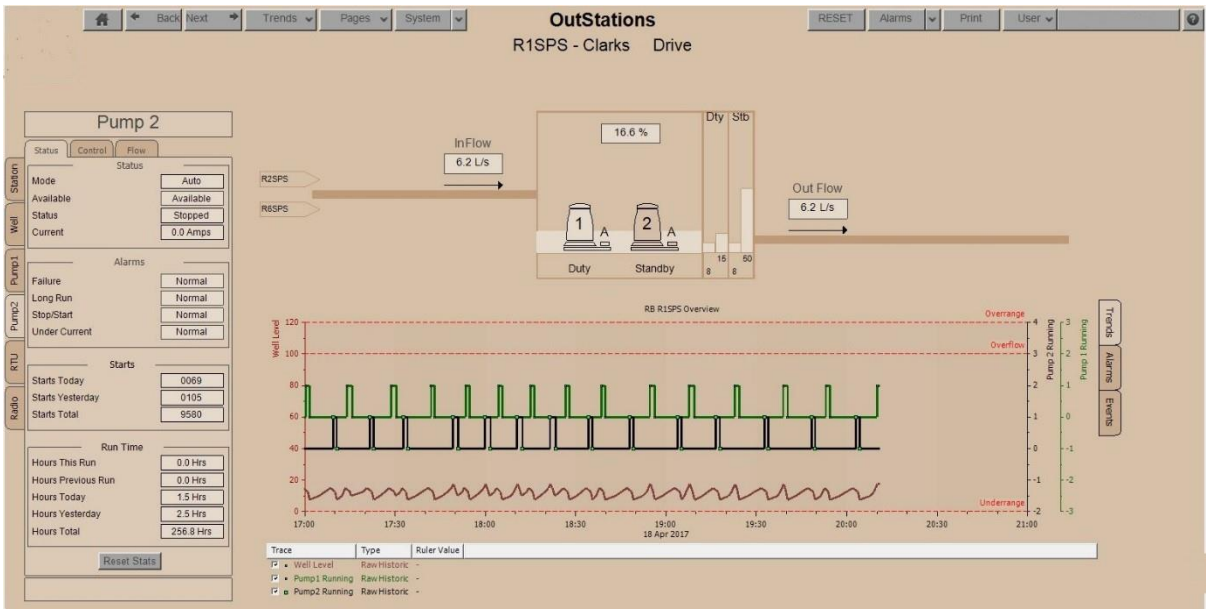


Figure 3-4: SCADA User Interface

3.3 Asset Categorisation

While assets are easily split into water and sewerage, there are many kinds of assets that require categorisation and grouping to effectively manage. For example, the management of electronic assets is very different to mechanical pump assets. GRC WBU categorises assets into class, sub-class, category, type and sub-type to assist with asset management activities.

3.3.1 Asset Classes

GRC WBU have separated assets into two classes (as shown in Figure 3-5) due to the inherent differences between water and sewerage networks. Each asset class has been given a sub-class that reflects the general operation mode of the asset. Below ground assets such as sewerage gravity mains and manholes operate autonomously without any external inputs and are therefore considered “Passive” assets. Assets that require external inputs such as electricity or chemicals (typically above ground assets) such as pump stations and treatment plants are considered “Active” assets.

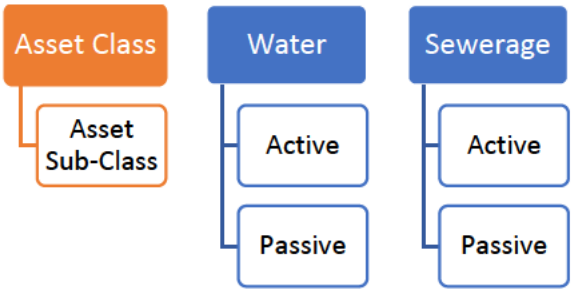


Figure 3-5: GRC WBU Asset Classes & Sub-Classes

3.3.2 Asset Categories

Under each class, GRC WBU have grouped assets across a range of categories according to function which generally align with the water process of sourcing, treatment, storage and distribution and sewerage process of collection, treatment and release/re-use. These classes are represented in Figure 3-6.

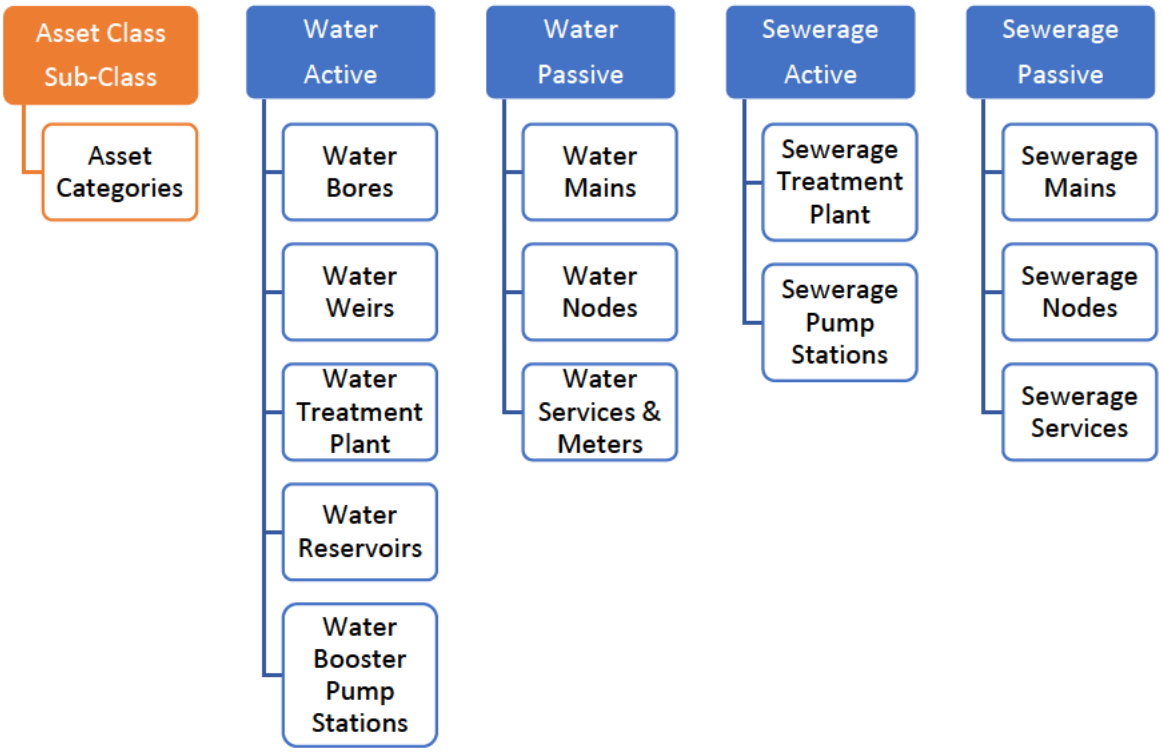


Figure 3-6: GRC WBU Asset Categories

3.3.3 Asset Types

Each asset category has been further broken down into asset types and sub-types which are represented in Figure 3-7, Figure 3-8 and Figure 3-9. Asset criticality assessment is best applied at an asset type/sub-type level because only one or two might be critical. If assessed at the asset category level all assets in that category would be considered critical, which isn't necessarily correct.

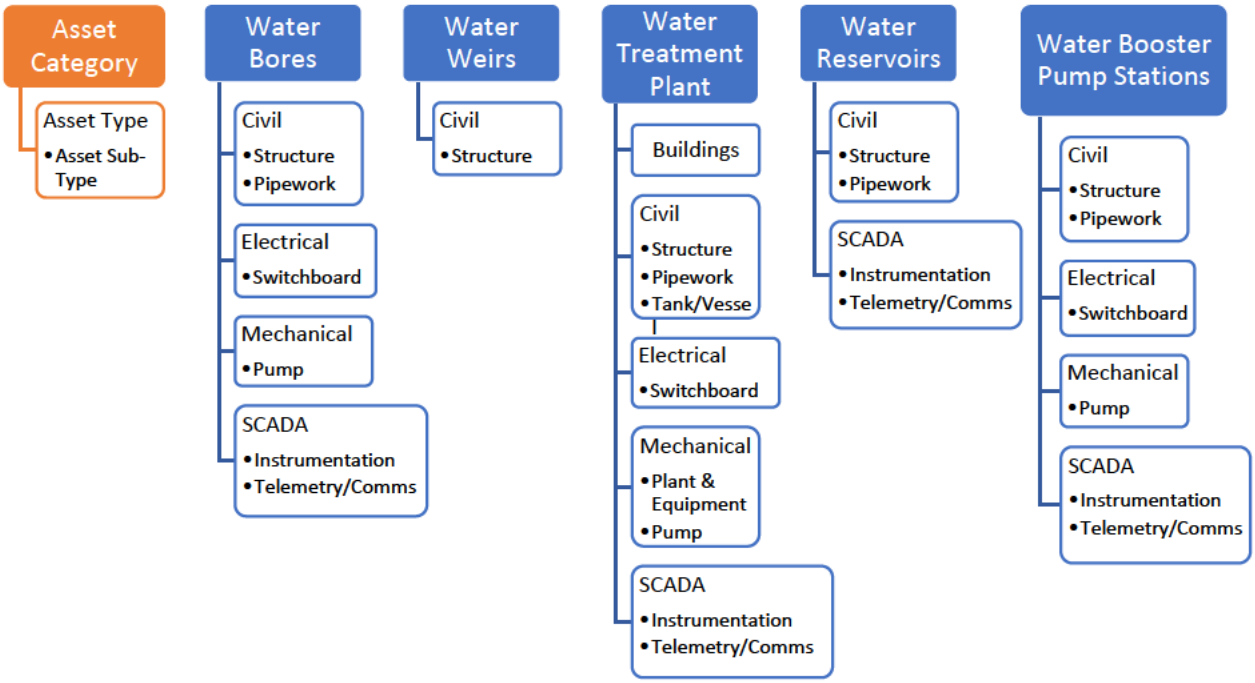


Figure 3-7: GRC WBU Active Water Asset Types & Sub-Types

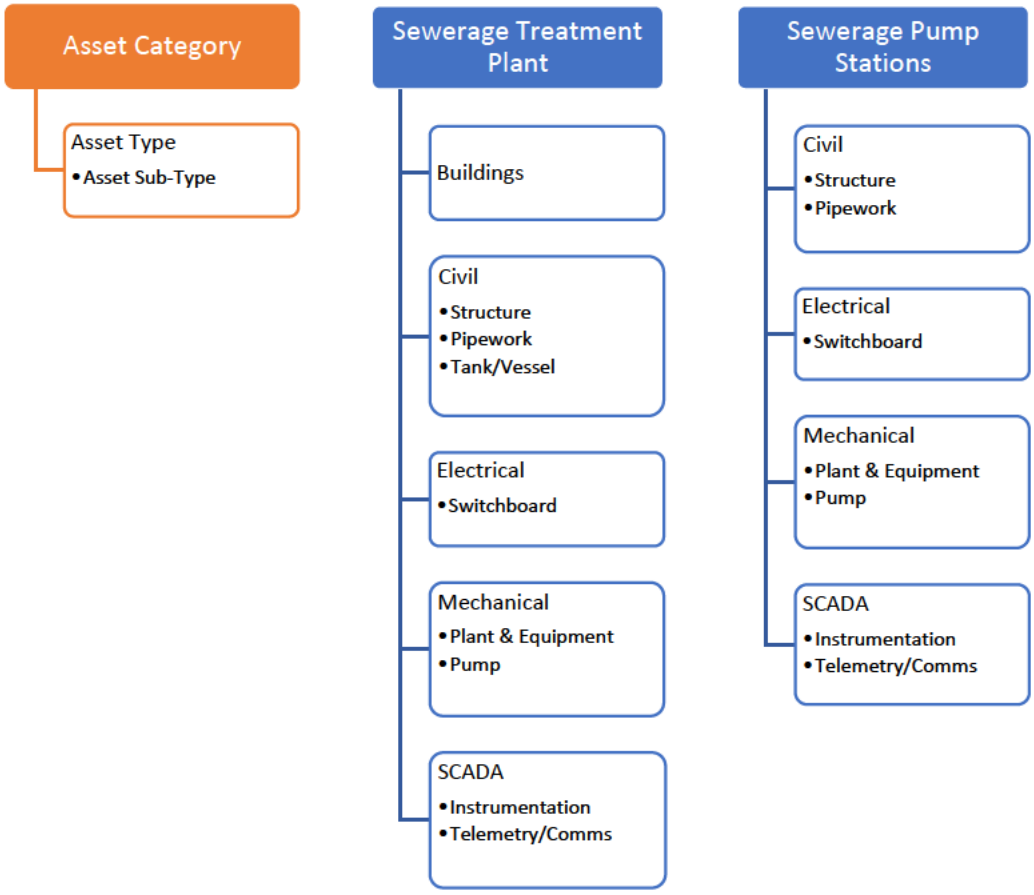


Figure 3-8: GRC WBU Active Sewerage Asset Types & Sub-Types

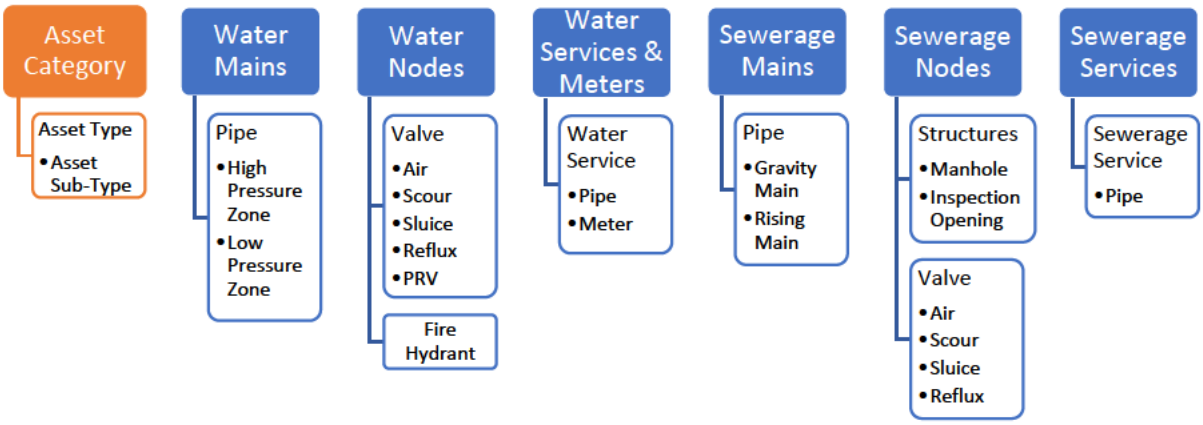


Figure 3-9: GRC WBU Passive Water & Sewerage Asset Types & Sub-Types

3.4 Asset Failure Modes & Impacts

3.4.1 Failure Mode and Effect Analysis (FMEA)

As discussed in section 2.3.2.1, FMEA is arguably the most recognised tool for systematically identifying asset failure modes, their effects and ultimate consequences. Utilising a methodology like FMEA ensures that minimal failure modes are missed and that sub-sequent effects are tracked through to find their ultimate effects (Márquez 2007). Sometimes the effect of a minor asset failure can lead to the failure of other more critical assets.

Due to time and resource constraints, a FMEA workshop was unable to be held with GRC staff to determine asset failure modes and maintenance requirements specific to GRC. A workshop process is key to ensuring that the assessment is made by experienced operators and technical experts and to avoid unintentional bias that may occur from single person assessment. Instead, existing research on water and sewerage asset failure modes has been reviewed and collated for implementation in the ACA with the expectation that GRC will review as part of the implementation process. This is seen as a reasonable approach as the possible failure modes are relatively static (i.e. a pipe asset doesn't fail differently because it's at a different organisation).

Olsen (2015) found that while an asset can experience multiple specific failure modes these can be summarised into one failure mode with the same failure effects. The example given by Olsen (2015) was that a pipe can fail by longitudinal cracking, joint displacement and wall perforation which would result in the effects of overflow and loss of supply. A summarised failure mode of structural failure would result in the same effects (Olsen 2015). This greatly simplifies the process and time required to determine failure mode consequences and ultimately the calculation of asset criticality score and has therefore been utilised in this dissertation.

Results of a high level FMEA performed on water and sewerage assets by Toowoomba Regional Council as part of Olsen's (2015) study have been adapted to reflect GRC asset categorisation. These failure modes have been expanded and verified against research by IPWEA NAMS (2006b), US EPA (2016) and Rajeev et al. (2014) which found the same or similar failure modes which are applicable to GRC assets.

3.4.2 Water Asset Failure Modes

The results of the adapted FMEA for water assets are detailed in Table 3-1.

Table 3-1: Water Asset Failure Modes & Effects adapted from Olsen 2015, IPWEA NAMS 2006b, US EPA 2016 and Rajeev et al. 2014

Asset Category	Summarised Potential Failure Modes	Potential Failure Effects
Active Water Assets		
Water Bore	• Civil or structural failure • Mechanical equipment failure • Electrical equipment failure (including power loss) • Instrumentation failure • Communications equipment failure	• Water loss/leakage • Loss of water source/supply • Contamination of water supply • Contamination of water source • Injuries/Illness • Loss of asset due to damage
Water Weirs	• Civil or structural failure	• Loss of water source/supply • Environmental impacts • Loss of asset due to damage
Water Treatment Plant	• Civil or structural failure • Mechanical equipment failure • Electrical equipment failure (including power loss) • Instrumentation failure • Communications equipment failure • Operator error	• Water loss/leakage • Loss of water supply • Contamination of water supply • Contamination of water source • Injuries/Illness • Loss of asset due to damage
Water Reservoirs	• Civil or structural failure • Electrical equipment failure (including power loss) • Instrumentation failure • Communications equipment failure	• Water loss/leakage • Loss of water supply/storage • Contamination of water supply • Injuries/Illness • Loss of asset due to damage
Water Pump Station	• Civil or structural failure • Mechanical equipment failure • Electrical equipment failure (including power loss) • Instrumentation failure • Communications equipment failure	• Water loss/leakage • Loss of water pressure/supply • Contamination of water supply • Injuries/Illness • Loss of asset due to damage
Passive Water Assets		
Water Mains	• Civil or structural failure • Undersized/oversized (capacity)	• Water loss/leakage • Loss of water pressure/supply • Contamination of water supply • Injuries/Illness • Loss of asset due to damage
Water Nodes	• Civil or structural failure	• Loss of water pressure/supply • Loss of network operation capability (isolation/cleaning/filling/firefighting) • Loss of asset due to damage
Water Services & Meters	• Civil or structural failure	• Water loss/leakage • Loss of water pressure/supply • Loss of revenue

		• Loss of asset due to damage

The failure effects were generally consistent across each water asset category with a few unique effects for some categories. The common failure effects of water assets which have been assessed for consequences in section 3.5.2 are:

- Water loss/leakage
- Loss of water source/supply/pressure
- Contamination of water supply
- Contamination of water source
- Loss of network operation capability (isolation/cleaning/filling/firefighting)
- Loss of revenue
- Loss of asset due to damage
- Environmental impacts
- Injuries/Illness

3.4.3 Sewerage Asset Failure Modes

The results of the adapted FMEA for sewerage assets are detailed in Table 3-2.

Table 3-2: Sewerage Asset Failure Modes & Effects adapted from Olsen 2015, IPWEA NAMS 2006b, US EPA 2016 and Rajeev et al. 2014

Asset Category	Summarised Potential Failure Modes	Potential Failure Effects
Active Sewerage Assets		
Sewerage Treatment Plant	• Civil or structural failure • Mechanical equipment failure • Electrical equipment failure (including power loss) • Instrumentation failure • Communications equipment failure • Operator error	• Sewerage overflow/leakage • Environmental contamination • Injuries/Illness • Loss of asset due to damage
Sewerage Pump Station	• Civil or structural failure • Mechanical equipment failure • Electrical equipment failure (including power loss) • Instrumentation failure • Communications equipment failure	• Sewerage overflow/leakage • Environmental contamination • Injuries/Illness • Loss of asset due to damage
Passive Water Assets		
Sewerage Mains	• Civil or structural failure • Blockage • Undersized/oversized (capacity/odour)	• Sewerage overflow/leakage • Environmental contamination • Injuries/Illness • Loss of asset due to damage
Sewerage Nodes	• Civil or structural failure	• Sewerage overflow/leakage • Environmental contamination • Injuries/Illness • Loss of asset due to damage

Sewerage Services	• Civil or structural failure	• Sewerage overflow/leakage • Loss of sewerage supply • Environmental contamination • Injuries/Illness • Loss of asset due to damage

Unlike water assets, the failure effects were generally consistent across each sewerage asset category. The common failure effects of sewerage assets which have been assessed for consequences in section 3.5.3 are:

- Sewerage overflow/leakage
- Loss of sewerage supply
- Environmental contamination
- Injuries/Illness
- Loss of asset due to damage

3.5 Consequence of Failure Criteria

3.5.1 GRC Risk Management Consequence Alignment

Consequence of failure criteria were developed as part of the ACA framework to ensure consistent assessment and minimise bias. The criteria were aligned with GRC's Risk Management Policy's broad high-level themes, objectives and enterprise consequences and adapted to suit water and sewerage assets. This was done by breaking the high-level categories down into relevant sub-categories. A key requirement for the developed criteria was that they could be measured, allowing severity scoring to be applied to reflect this. The suitability of GRC's risk categories (defined in Table 3-3) for usage in the ACA framework were considered as described in Table 3-4.

Table 3-3: GRC Risk Management Policy Objectives (GRC 2018) & Aligned Enterprise Consequences (GRC 2013)

Risk Management Themes	Risk Management Objectives	Aligned Enterprise Consequences
Strategic & Operational	There is a low tolerance for decisions that do not align with Council's long-term strategic objectives. There is a moderate tolerance for risks associated with the pursuit of business opportunities or priorities.	Lost production / higher costs
Governance	There is a low tolerance for non-compliance with regulatory/ statutory or professional requirements. Council maintains a zero-tolerance stance towards fraud, unethical behaviour or discriminatory actions.	Reputation / Compliance
Environment	There is a low tolerance for decisions or actions that may adversely impact on the region's natural environment.	Environment
Reputational	There is a low tolerance for risks that may have negative implications on how the Council is perceived with external stakeholders or the wider community	Reputation / Compliance
Financial	There is a low tolerance for decisions that have a negative impact on Council's long-term financial sustainability i.e. waste of resources or unnecessary commitments created. There is a moderate tolerance for investing in opportunities or innovation that can enhance growth in line with strategic objectives.	Assets/Financial

Safety	Council is focused on a zero-harm objective and has a low tolerance for decisions or actions that may impact on the health, safety or well- being of Council staff or the wider community.	Personnel

Table 3-4: Suitability assessment of GRC Risk Categories for use in an ACA

Risk Management Themes	Aligned Enterprise Consequences	Suitability for an ACA Framework
Strategic & Operational	Lost production / higher cost	The impacts of asset failure on GRC's strategic objectives is not measurable at an asset failure level and therefore is not considered suitable.
		The impacts of asset failure on GRC's operations with respect to service delivery can be measured and is a key component of asset risk.
Governance	Reputation / Compliance	The impacts of asset failure on GRC's governance with respect to compliance can be measured and is a key component of asset risk.
Environment	Environment	The impacts of asset failure on the environment can be measured and is a key component of asset risk.
Reputational	Reputation / Compliance	The impacts of asset failure on GRC's reputation can be measured and is a key component of asset risk.
Financial	Assets/Financial	The impacts of asset failure on GRC's financials can be measured and is a key component of asset risk.
Safety	Personnel	The impacts of asset failure on operational staff safety is difficult to measure and has been excluded, however impacts to Public Health & Safety can be measured and is a key component of asset risk.

As detailed in Table 3-4, all categories were found to be suitable with the exception of strategic objectives and operational staff safety due to lack of measurability.

3.5.2 Water Asset Consequence Criteria

For an ACA to be effective it requires a significant level of granularity to ensure assets don't score equally and can be therefore be prioritised. Based on the failure modes identified in section 3.4, each GRC aligned enterprise consequence category was broken down into several consequence of failure categories. A description of each consequence of failure category is provided in Table 3-5.

Table 3-5: Water Asset Consequence of Failure Categories

Enterprise Risk Consequences	Consequence of Failure Categories	Consequence of Failure Category Description
Operational	Service Delivery	Measurable impacts of service delivery due to asset failure include number of customers affected, type of stakeholders, level of redundancy and system tolerance to failure in terms of time.
Governance	Regulatory Compliance	Measurable impacts to regulatory compliance include potential level of compliance exceedance and reporting requirements.
Environment	Environmental Damage	Measurable impacts of environmental damage due to asset failure include the proximity to sensitive areas and level of potential contamination/damage.

Reputational	Negative Reputation Impacts	Measurable negative impacts to reputation include level of media attention and visibility to the public.
Financial	Repair Costs	Measurable impacts to repair cost include the original asset cost and difficulty of repair.
	Third Party Losses	Measurable impacts to third party losses include type of third party and number of parties impacted.
	Loss of Revenue	Measurable impacts to loss of revenue include the cost of lost revenue.
Safety	Public Health & Safety	Measurable impacts to public health & safety include the number of customers affected and level of potential impact

Some of the consequence of failure categories were still quite broad in terms of being able to assess the consequences of an asset's failure. To address this and further improve the granularity, each category was split into several sub-categories as shown and described in Table 3-6.

Table 3-6: Water Asset Consequence of Failure Sub-Categories

Consequence of Failure Categories	Consequence of Failure Sub-Categories	Consequence of Failure Sub-Category Description
Service Delivery	Equivalent Population (EP) Impacted	Estimated number of customers affected by an asset failure with respect to service delivery.
	Customer Type	The type of customers affected by loss of service including open space/recreation, residential, community, commercial, industrial and schools.
	Level of Redundancy	The level of a redundancy an asset has within the service delivery system.
	Failure Tolerance Period	The period of time that failure can be tolerated before its effects on network service delivery become critical.
Regulatory Compliance	Level of Potential Compliance Exceedance	The potential magnitude of compliance limit exceedance.
	Reporting Requirements	The potential level of reporting required following an asset failure (e.g. CEO, State Government etc.)
Environmental Damage	Proximity to Sensitive Areas	The relative proximity of an asset to environmentally sensitive areas and whether its failure will impact those areas.
	Level of Potential Contamination/Damage	The magnitude of potential environmental contamination/damage in a worst-case event for that asset.
Negative Reputation Impacts	Media Attention	The level and coverage of media attention regarding a failure event.
	Visibility to Public	The level of physical visibility to the public during and following a failure event.
Repair Costs	Asset Cost	The actual asset cost is a known quantity that is directly related to potential repair or replacement cost.
	Difficulty of Repair	The difficulty of repair due to accessibility, complexity and available skills, spares, materials and equipment etc. measured in terms of time.
Third Party Losses	Type of Third-Party	The type of third-party that will incur loss including general public, community, commercial, industrial and service authorities.
	Number of Impacted Parties	Estimated number of third parties that will incur loss due to an asset failure.
Loss of Revenue	Cost of Lost Revenue	The estimated cost of lost revenue in terms of potential income but excluding repair/loss etc. costs.

Public Health & Safety	Equivalent Population (EP) Impacted	Estimated number of customers affected by an asset failure with respect to public health & safety.
	Level of Potential Impact	The magnitude of potential public health & safety impacts in a worst-case event for that asset.

3.5.3 Sewerage Asset Consequence Criteria

The process for water assets discussed in section 3.5.2 was also completed for sewerage assets. A description of each consequence of failure category is provided in Table 3-7.

Table 3-7: Sewerage Consequence of Failure Categories

Enterprise Risk Consequences	Consequence of Failure Categories	Consequence of Failure Category Description
Operational	Service Delivery	Measurable impacts of service delivery due to asset failure include number of customers affected, type of stakeholders, level of redundancy and system tolerance to failure in terms of time.
Governance	Regulatory Compliance	Measurable impacts to regulatory compliance include potential level of compliance exceedance and reporting requirements.
Environment	Environmental Damage	Measurable impacts of environmental damage due to asset failure include the proximity to sensitive areas and level of potential contamination/damage.
Reputational	Negative Reputation Impacts	Measurable negative impacts to reputation include level of media attention and visibility to the public.
Financial	Repair Costs	Measurable impacts to repair cost include the original asset cost and difficulty of repair.
	Third Party Losses	Measurable impacts to third party losses include type of third party and number of parties impacted.
Safety	Public Health & Safety	Measurable impacts to public health & safety include the number of customers affected and level of potential impact

Like the process for water assets discussed in section 3.5.2, some of the consequence of failure categories were still quite broad in terms of being able to assess the consequences of an asset's failure. To address this and further improve the granularity, each category was split into several sub-categories as shown and described in Table 3-8. Loss of Revenue was not easily considered for sewerage assets and was therefore excluded.

Table 3-8: Sewerage Asset Consequence of Failure Sub-Categories

Consequence of Failure Categories	Consequence of Failure Sub-Categories	Consequence of Failure Sub-Category Description
Service Delivery	Equivalent Population (EP) Impacted	Estimated number of customers affected by an asset failure with respect to service delivery.
	Customer Type	The type of customers affected by loss of service including open space/recreation, residential, community, commercial, industrial and schools.
	Level of Redundancy	The level of a redundancy an asset has within the service delivery system.
	Failure Tolerance Period	The period of time that failure can be tolerated before its effects on network service delivery become critical.

Regulatory Compliance	Level of Potential Compliance Exceedance	The potential magnitude of compliance limit exceedance.
	Reporting Requirements	The potential level of reporting required following an asset failure (e.g. CEO, State Government etc.)
Environmental Damage	Proximity to Sensitive Areas	The relative proximity of an asset to environmentally sensitive areas and whether its failure will impact those areas.
	Level of Potential Contamination/Damage	The magnitude of potential environmental contamination/damage in a worst-case event for that asset.
Negative Reputation Impacts	Media Attention	The level and coverage of media attention regarding a failure event.
	Visibility to Public	The level of physical visibility to the public during and following a failure event.
Repair Costs	Asset Cost	The actual asset cost is a known quantity that is directly related to potential repair or replacement cost.
	Difficulty of Repair	The difficulty of repair due to accessibility, complexity and available skills, spares, materials and equipment etc. measured in terms of time.
Third Party Losses	Type of Third-Party	The type of third-party that will incur loss including general public, community, commercial, industrial and service authorities.
	Number of Impacted Parties	Estimated number of third parties that will incur loss due to an asset failure.
Public Health & Safety	Equivalent Population (EP) Impacted	Estimated number of customers affected by an asset failure with respect to public health & safety.
	Level of Potential Impact	The magnitude of potential public health & safety impacts in a worst-case event for that asset.

3.6 Consequence of Failure Weightings

3.6.1 Calculation of Weightings using the AHP

One of the key advantages of using the AHP is that many criteria can be considered as a series of one-on-one comparisons between two criteria, greatly simplifying the assessment and ensuring the judgements are consistent by use of the Consistency Ratio (refer to Equation 4). The 6 consequence of failure categories and 17 sub-categories developed in section 3.5 were weighted using the AHP to be specific to GRC requirements.

Initially a 16x16 (Sewerage) and 17x17 (Water) comparison matrix was developed to individually compare each sub-criteria, however with 256/289 comparisons this soon became overwhelming. The comparison was certainly time intensive, but mostly overwhelming due to the difficulty of choosing a meaningful score between 1 and 9 and maintaining consistency. There was also limited literature on Random Consistency Index values of n > 11 which were required to perform assessment at this scale.

Instead, a two-level approach was taken with a 6x6 consequence of failure category matrix and various size matrices of sub-criteria limited to those under one of the main categories (i.e 4x4 under service delivery). The process for each matrix assessment was as follows:

1. Develop $x \times x$ matrix scoring the top right diagonal half with reciprocal scoring automatically calculated in the bottom left diagonal half.

Consequence Categories RAW Comparison	Operational	Governance	Environment	Reputational	Financial	Safety
Operational	1.0000	2.0000	3.0000	4.0000	1.0000	2.0000
Governance	0.5000	1.0000	3.0000	4.0000	1.0000	2.0000
Environment	0.3333	0.3333	1.0000	4.0000	0.3333	0.5000
Reputational	0.2500	0.2500	0.2500	1.0000	0.2500	0.3333
Financial	1.0000	1.0000	3.0000	4.0000	1.0000	1.0000
Safety	0.5000	0.5000	2.0000	3.0000	1.0000	1.0000
Column Totals	**3.5833**	**5.0833**	**12.2500**	**20.0000**	**4.5833**	**6.8333**

Figure 3-10: Example Raw Score Consequence of Failure Category Judgement Matrix

Operational Consequence Sub-Categories RAW Comparison	Equivalent Population (EP) Impacted	Customer Type	Level of Redundancy	Failure Tolerance Period
Equivalent Population (EP) Impacted	1.0000	6.0000	1.0000	0.2500
Customer Type	0.1667	1.0000	0.1667	0.1429
Level of Redundancy	1.0000	6.0000	1.0000	0.5000
Failure Tolerance Period	4.0000	7.0000	2.0000	1.0000
Column Totals	**6.1667**	**20.0000**	**4.1667**	**1.8929**

Figure 3-11: Example Raw Score Consequence of Failure Sub-Category Judgement Matrix

2. Calculate normalised matrix scoring and determine the Priority Vector (i.e. weighting percentage)

Consequence Categories Normalised Comparison	Operational	Governance	Environment	Reputational	Financial	Safety	Cumulative Normalised Score	Priority Vector
Operational	0.2791	0.3934	0.2449	0.2000	0.2182	0.2927	1.6283	**27.14**
Governance	0.1395	0.1967	0.2449	0.2000	0.2182	0.2927	1.2920	**21.53**
Environment	0.0930	0.0656	0.0816	0.2000	0.0727	0.0732	0.5861	**9.77**
Reputational	0.0698	0.0492	0.0204	0.0500	0.0545	0.0488	0.2927	**4.88**
Financial	0.2791	0.1967	0.2449	0.2000	0.2182	0.1463	1.2852	**21.42**
Safety	0.1395	0.0984	0.1633	0.1500	0.2182	0.1463	0.9157	**15.26**
Column Totals	1	1	1	1	1	1	6	

Figure 3-12: Example Normalised Score Consequence of Failure Category Judgement Matrix

3. Calculate maximum Eigenvalue based on normalised results and determine Consistency Ratio. If Consistency Ratio < 10%, reassess initial scoring for consistency until obtained.

Consistency Ratio	
Eigenvalue Max	6.264
CI	0.05
CR	4.26%
CR < 10%?	Yes

Figure 3-13: Example Consistency Ratio Calculation

The global Priority Vector (VP) weighting for each sub-category was then determined by multiplying its PV by the PV of its main category as shown in Equation 5 and Figure 3-14.

$$\text{Category}PV \times \text{Sub-Category}PV = \text{Global}PV \quad \text{(Equation 5)}$$

Water Asset Global Consequence Weighting				
Category	**Category Weighting (%)**	**Sub-Category**	**Sub-Category Weighting (%)**	**Global Sub-Category Weighting (%)**
Operational	27.14	Equivalent Population (EP) Impacted	20.86	5.66
		Customer Type	4.81	1.31
		Level of Redundancy	24.16	6.56
		Failure Tolerance Period	50.17	13.62

Figure 3-14: Example Global Sub-Category Weighting Calculation

3.6.2 Water Asset Global Weighting Results

The results of the weighting for water assets is described in Figure 3-15. Operational had the highest overall category weighting with 27.14% which was closely followed by Governance on 21.53%, Financial on 21.42% and Safety on 15.26%. The Environmental category was approximately half of the higher categories at 9.77% while Reputation was considered unimportant with the lowest score of 4.88%. The sub-categories were compared within each category and weightings determined. These weightings were then multiplied by the category weighting to determine the global sub-criteria weightings as detailed in Figure 3-15.

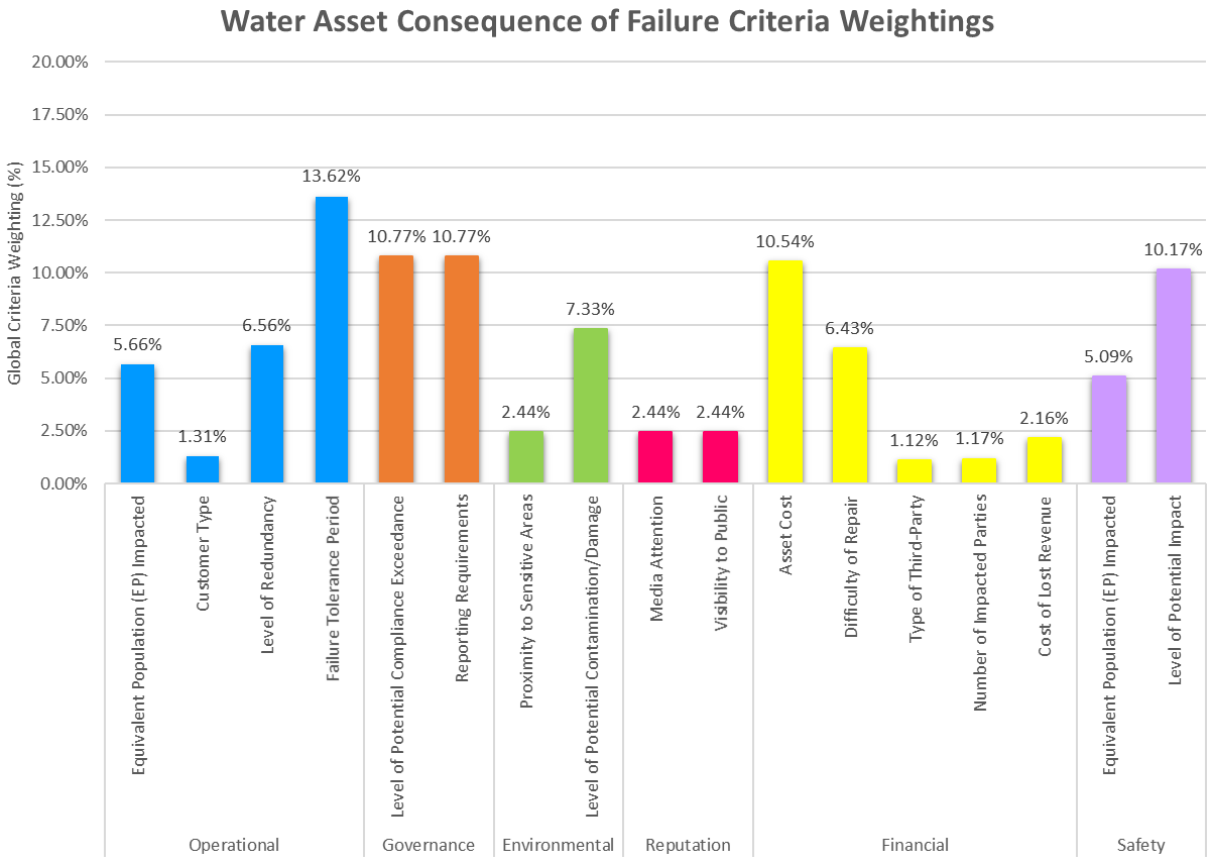


Figure 3-15: Water Asset Consequence of Failure Criteria Weightings

3.6.3 Sewerage Asset Global Weighting Results

The results of the weighting for sewerage assets is described in Figure 3-16. Operational had the highest overall category weighting with 29.52% which was closely followed by Financial on 22.35%. Environmental and Governance were equal on 15.05% closely followed by Safety on 13.44%. Again, Reputation was considered unimportant with the lowest score of 4.58%. The sub-categories were compared within each category and weightings determined. These weightings were then multiplied by the category weighting to determine the global sub-criteria weightings as detailed in Figure 3-16.

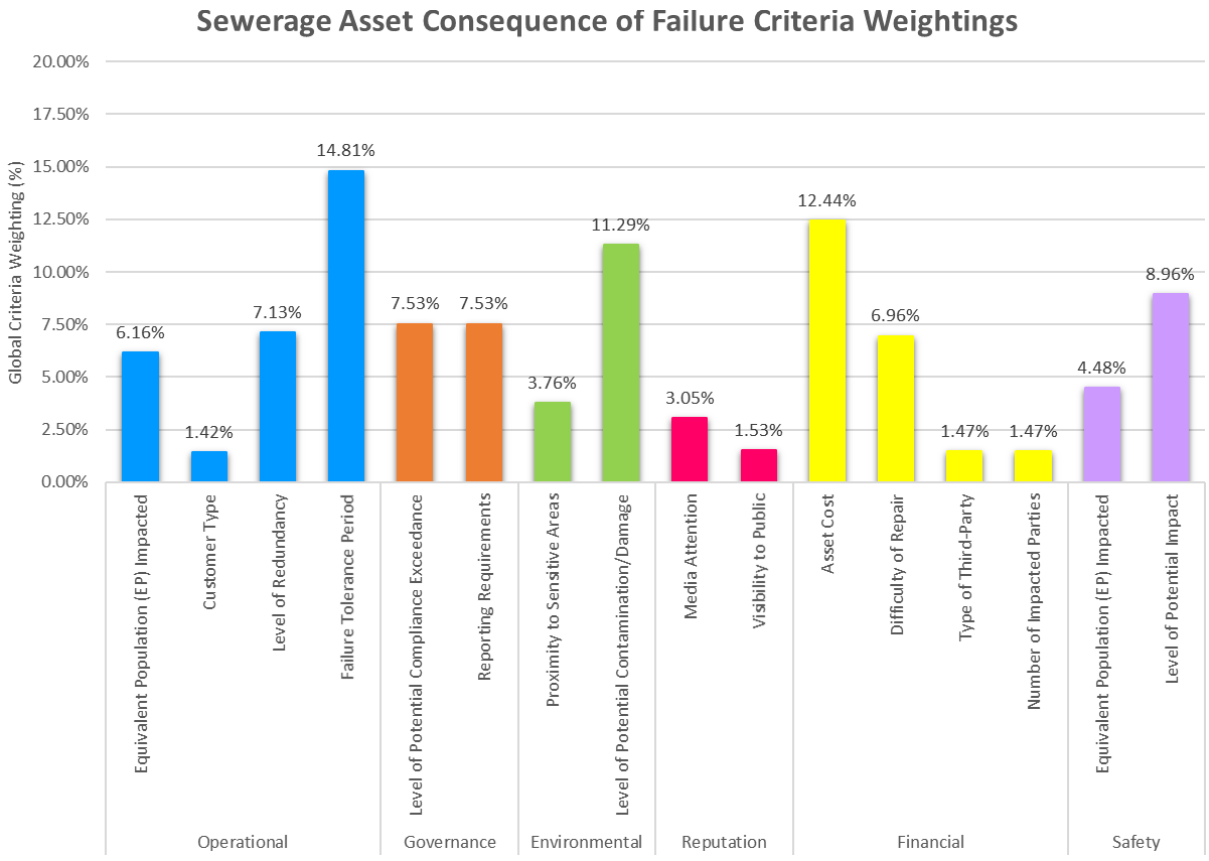


Figure 3-16: Sewerage Asset Consequence of Failure Criteria Weightings

3.7 Consequence Severity Evaluation Criteria

Consequence severity evaluation criteria are an essential component of an ACA as they define the measurement scale and definition for each of the consequences of failure identified in section 3.5. The development of suitable consequence severity evaluation criteria involved:

- Consideration of available data sources identified in section 3.2 with respect to how consequences could be measured and if a qualitative or quantitative assessment was applicable
- Consideration of GRC risk management framework with respect to their enterprise consequence severity descriptions
- Selection of a scoring scale to be used consistently across all consequence categories as a measure of the severity
- Development of scoring definitions to ensure that ACA assessors are consistent across the asset portfolio.

3.7.1 GRC Risk Management Severity Alignment

As part of the development of severity criteria, GRC's Enterprise Risk Management Framework was reviewed with a particular focus on the consequence risk matrix used for the assessment of identified risks. The consequence matrix as shown in Table 3-9 utilised a semi-quantitative approach with both numerical and descriptive scoring being utilised and some consequences measured by cost or length of time rather than just description.

As the risk matrix was developed for organisational enterprise risks, the severity criteria in each category weren't detailed enough or appropriate to be used in an ACA and therefore couldn't be utilised. However, the semi-quantitative 1-5/Insignificant-Catastrophic scale used to reflect the assessed severity is consistent with industry standards and could be utilised in the ACA (IPWEA NAMS 2006b).

Table 3-9: GRC Enterprise Risk Management Framework: Risk Matrix (GRC 2013)

Enterprise Consequence	Assets / Financial	Lost production / higher costs	Personnel	Environment	Reputation / Compliance
5 Catastrophic	catastrophic damage >$10M	completion delayed 5yrs	Persistent staff issues disrupt delivery of essential services	significant, irreparable damage	*Not defined*
4 Major	major damage $M1-10M	cost increase $1M-10M	average retention time 18 months	significant repairable damage	official misconduct / prosecution
3 Moderate	medium damage $50K-1M	delayed 1 yr or cost increase $50K-1M	50% of employees mildly stressed / dissatisfied	moderate damage / unsatisfactory EPA audit	persistent harassment, investigations, conflict of interest
2 Minor	low-medium damage $3K-50K	cost increase $1K-50K	30% of employees mildly stressed / dissatisfied	minor damage	sustained minor legal non-compliance
1 Insignificant	none or low damage <$3K	completion delayed 3mths	10% of employees mildly stressed / dissatisfied	insignificant damage	late / limited compliance

3.7.2 Severity Evaluation Scoring Scale

Sydney Water Corporation (2010) and IPWEA NAMS (2006a) suggest using a 1-5 scale to assess severity, while WERF (2010) propose a 1-10 scale. While there are some advantages with the higher scale in terms of granularity of results, it can also create issues with consistent scoring as the assessor can get confused when there is a small difference between each level of severity or too many options to choose from. Where a 1-5 scale is used in risk assessment it is very commonly paired with an Insignificant-Catastrophic qualitative severity description.

Based on these findings and the review of GRC's risk matrix in section 3.7.1 the semi-quantitative 1-5/Insignificant-Catastrophic scale as shown in Table 3-10 was adopted for use in the ACA.

Table 3-10: GRC Enterprise Risk Management Framework: Severity Scale (GRC 2013)

Severity Score	Severity Description
1	Insignificant
2	Minor
3	Moderate
4	Major
5	Catastrophic

3.7.3 Severity Evaluation Criteria, Scores and Definitions

A semi-quantitative approach was used in the development of severity evaluation criteria and scoring but was predominantly qualitative due to the lack of historic quantitative data. It is envisioned that as quantitative data becomes available the criteria would be reviewed and the ACA framework updated.

Due to time and available constraints the criteria were developed based on personal experience and similar studies by Olsen (2015) and Park et al. (2010). It is expected that these criteria would be revised and further customised to suit GRC WBU during implementation.

The development of each criteria definition has generally been considered in line with the Insignificant-Catastrophic/1-5 scale defined in Table 3-10 and implemented in tables Table 3-11 and Table 3-12. Where possible, consideration of measurability was made which resulted in some changes to consequence criteria as discussed in section 3.5.

It was noted that while some definitions may be appropriate long term some are still difficult to measure. It is envisioned where this is the case that a qualitative assessment would be made which will improve over time as more data is collected to analyse.

Table 3-11: Water Asset Severity Criteria and Definitions

Consequence of Failure Sub-Categories	Score	Water Asset Consequence Severity Evaluation Criteria	Definition Comments
Operational - Service Delivery			
Equivalent Population (EP) Impacted	1 2 3 4 5	Less than 100 EP 100 to 2,000 EP 2,000 to 3,000 EP 3,000 to 5,000 EP More than 5,000 EP	Use quantitative date (i.e. modelling results) if available, otherwise provide best estimate of impact. Consider water produced by the asset and average daily demand of 374 L/EP/Day to determine EP.
Customer Type	1 2 3 4 5	Open Space/Recreation/Not Applicable Residential Community Facilities/Services Commercial & Schools Industrial & Critical Services	Consider the highest level of customer that may be affected by the asset failure. Customers not mentioned should be scored comparatively with those listed.
Level of Redundancy	1 2 3 4 5	Failure has no impact, asset nonessential Standby asset in place and/or replacement asset/spares in stock Standby asset in place and/or spare parts not in stock but easily sourced Difficult to source/unavailable spare parts with minor dependent assets, no standby asset. Irreparable with major dependent assets, no standby asset.	Consider whether the asset has a standby asset during failure or is non-essential, can be replaced with like-for-like from current stock or repaired with spare parts from current stock.
Failure Tolerance Period	1 2 3 4 5	More than 28 days 14-28 days 7-14 days 1-7 days Less than 1 day	Consider how long stakeholders can tolerate reduced or loss of supply due to the asset failure. Select the lowest tolerance period.

Governance - Regulatory Compliance			
Level of Potential Compliance Exceedance	1 2 3 4 5	Compliance not measured Compliance criteria slightly exceeded Compliance criteria significantly exceeded Potential Penalty Infringement Notice (PIN) Criminal Prosecution	Consider the impacts the asset failure has on meeting compliance criteria such as water quality limits.
Reporting/Escalation Requirements	1 2 3 4 5	Supervisor WBU/GRC Senior Management CEO/State Government Public Safety Announcement Emergency Services	Consider what level of escalation in the hierarchy of command is required if the asset fails. This should align with the Level of Potential Compliance Exceedance.
Environment - Environmental Damage			
Proximity to Sensitive Areas	1 2 3 4 5	No impact Impact after > 1 day (200m+) Impact in < 1 day (50-200m) Impact in <3 hours (<50m) Immediate or unavoidable impact (0-10m)	Consider whether an impact is physically possible, distance from the area and the likely time period that the asset failure will take to reach the area.
Level of Potential Contamination/Damage	1 2 3 4 5	No impact Minor contamination of temporary nature Moderate contamination with short term rectification (< 1 week) Major contamination with long term rectification (> 1 week) Irreversible/permanent contamination	Consider the level of potential damage to the environment in terms of self-restoration, ease of rectification and magnitude of irreversible effects such as fish kills or permanent chemical contamination.
Reputation - Negative Reputation Impacts			
Media Attention	1 2 3 4 5	No coverage Local Media Textual/Photo Coverage Local Media Video Coverage State/National Coverage International Coverage	Consider the level of media coverage that may be drawn by an event and align with other impacts like service delivery, compliance and environment etc.
Visibility to Public	1 2 3 4 5	Restricted access/not visible Distantly visible and low concern Visible but tolerable concern Highly visible and high concern/upsetting Unavoidable visibility to lots of public with high concern/upsetting impacts	Consider how visible to the public the asset failure will be as this may influence the level of media/public attention actually received.
Financial - Repair Costs			
Asset Cost	1 2 3 4 5	Less than $10,000 $10,000 to $50,000 $50,000 to $100,000 $100,000 to $500,000 More than $500,000	Calculate using the AMS replacement cost of the asset assuming that a worst-case failure would result in a total asset write off.
Difficulty of Repair	1 2 3 4 5	Immediate Repair (< 12 hours) Minor complexity/Short Time Period (< 1 week) Moderate complexity/Moderate Time Period (1-4 weeks) Highly complex/Long Time Period (>4 weeks) Irreparable requiring bypass/forced redundancy	Consider the difficulty of replacing the asset in terms of location, time, resources, equipment, cost and spares and replacement availability etc. Consider if replacement of the asset will require upgrades/replacements of other assets to work.
Financial - Third Party Losses			
Type of Third-Party	1 2	No third parties impacted General public/Road Reserve	Consider the highest level of third party that may be affected by the

	3 4 5	Community & Commercial/State Land Industrial Service Authorities & Critical Services	asset failure. Third parties not mentioned should be scored comparatively with those listed.
Number of Impacted Parties	1 2 3 4 5	No third parties impacted <5 parties 5 to 10 parties 10 to 50 parties More than 50 parties	Estimated number of third parties impacted by the asset failure.
Financial - Loss of Revenue			
Cost of Lost Revenue	1 2 3 4 5	No revenue lost Less than $5,000 $5,000 to $15,000 $15,000 to $25,000 More than $25,000	Estimated loss of water based on water produced/distributed by the asset and average daily demand of 374 L/EP/Day.
Safety - Public Health & Safety			
Equivalent Population (EP) Impacted	1 2 3 4 5	Less than 10 EP 10 to 25 EP 25 to 100 EP 100 to 1,000 EP More than 1,000 EP	Use quantitative date (i.e. modelling results) if available, otherwise provide best estimate of impact. Consider water produced by the asset and average daily demand of 374 L/EP/Day to determine EP.
Level of Potential Impact	1 2 3 4 5	No illness/injury caused Minor illness/injury without treatment First Aid/Doctor Treatment Hospitalisation Death or Disability	Consider the level of potential impacts on public health and safety in terms of physical harm, biological/chemical contamination harm etc.

Table 3-12: Sewerage Asset Severity Criteria and Definitions

Consequence of Failure Sub-Categories	Score	Sewerage Asset Consequence Severity Evaluation Criteria	Definition Comments
Operational - Service Delivery			
Equivalent Population (EP) Impacted	1 2 3 4 5	Less than 100 EP 100 to 2,000 EP 2,000 to 3,000 EP 3,000 to 5,000 EP More than 5,000 EP	Use quantitative date (i.e. modelling results) if available, otherwise provide best estimate of impact. Consider sewerage discharged by the asset and ADWF of 185 L/EP/Day to determine EP.
Customer Type	1 2 3 4 5	Open Space/Recreation/Not Applicable Residential Community Facilities/Services Commercial & Schools Industrial & Critical Services	Consider the highest level of customer that may be affected by the asset failure. Customers not mentioned should be scored comparatively with those listed.
Level of Redundancy	1 2 3 4	Failure has no impact, asset nonessential Standby asset in place and/or replacement asset/spares in stock Standby asset in place and/or spare parts not in stock but easily sourced	Consider whether the asset has a standby asset during failure or is non-essential, can be replaced with like-for-like from current stock or repaired with spare parts from current stock.

	5	Difficult to source/unavailable spare parts with minor dependent assets, no standby asset. Irreparable with major dependent assets, no standby asset.	
Failure Tolerance Period	1 2 3 4 5	More than 28 days 14-28 days 7-14 days 1-7 days Less than 1 day	Consider how long stakeholders can tolerate reduced or loss of supply due to the asset failure. Select the lowest tolerance period.
Governance - Regulatory Compliance			
Level of Potential Compliance Exceedance	1 2 3 4 5	Compliance not measured Compliance criteria slightly exceeded Compliance criteria significantly exceeded Potential Penalty Infringement Notice (PIN) Criminal Prosecution	Consider the impacts the asset failure has on meeting compliance criteria such as sewerage effluent release limits.
Reporting/Escalation Requirements	1 2 3 4 5	Supervisor WBU/GRC Senior Management CEO/State Government Public Safety Announcement Emergency Services	Consider what level of escalation in the hierarchy of command is required if the asset fails. This should align with the Level of Potential Compliance Exceedance.
Environment - Environmental Damage			
Proximity to Sensitive Areas	1 2 3 4 5	No impact Impact after > 1 day (200m+) Impact in < 1 day (50-200m) Impact in <3 hours (<50m) Immediate or unavoidable impact (0-10m)	Consider whether an impact is physically possible, distance from the area and the likely time period that the asset failure will take to reach the area.
Level of Potential Contamination/Damage	1 2 3 4 5	No impact Minor contamination of temporary nature Moderate contamination with short term rectification (< 1 week) Major contamination with long term rectification (> 1 week) Irreversible/permanent contamination	Consider the level of potential damage to the environment in terms of self-restoration, ease of rectification and magnitude of irreversible effects such as fish kills or permanent chemical contamination.
Reputation - Negative Reputation Impacts			
Media Attention	1 2 3 4 5	No coverage Local Media Textual/Photo Coverage Local Media Video Coverage State/National Coverage International Coverage	Consider the level of media coverage that may be drawn by an event and align with other impacts like service delivery, compliance and environment etc.
Visibility to Public	1 2 3 4 5	Restricted access/not visible Distantly visible and low concern Visible but tolerable concern Highly visible and high concern/upsetting Unavoidable visibility to lots of public with high concern/upsetting impacts	Consider how visible to the public the asset failure will be as this may influence the level of media/public attention actually received.
Financial - Repair Costs			
Asset Cost	1 2 3 4 5	Less than $10,000 $10,000 to $50,000 $50,000 to $100,000 $100,000 to $500,000 More than $500,000	Calculate using the AMS replacement cost of the asset assuming that a worst-case failure would result in a total asset write off.
Difficulty of Repair	1 2	Immediate Repair (< 12 hours) Minor complexity/Short Time Period (< 1 week)	Consider the difficulty of replacing the asset in terms of location, time, resources,

	3 4 5	Moderate complexity/Moderate Time Period (1-4 weeks) Highly complex/Long Time Period (>4 weeks) Irreparable requiring bypass/forced redundancy	equipment, cost and spares and replacement availability etc. Consider if replacement of the asset will require upgrades/replacements of other assets to work.
Financial - Third Party Losses			
Type of Third-Party	1 2 3 4 5	No third parties impacted General public/Road Reserve Community & Commercial/State Land Industrial Service Authorities & Critical Services	Consider the highest level of third party that may be affected by the asset failure. Third parties not mentioned should be scored comparatively with those listed.
Number of Impacted Parties	1 2 3 4 5	No third parties impacted <5 parties 5 to 10 parties 10 to 50 parties More than 50 parties	Estimated number of third parties impacted by the asset failure.
Financial - Loss of Revenue			
Cost of Lost Revenue	1 2 3 4 5	No revenue lost Less than $2,500 $2,500 to $5,000 $5,000 to $10,000 More than $10,000	Daily cost of estimated loss of water based on water produced/distributed by the asset and average daily demand of 374 L/EP/Day.
Safety - Public Health & Safety			
Equivalent Population (EP) Impacted	1 2 3 4 5	Less than 10 EP 10 to 25 EP 25 to 100 EP 100 to 1,000 EP More than 1,000 EP	Use quantitative date (i.e. modelling results) if available, otherwise provide best estimate of impact. Consider water produced by the asset and average daily demand of 374 L/EP/Day to determine EP.
Level of Potential Impact	1 2 3 4 5	No illness/injury caused Minor illness/injury without treatment First Aid/Doctor Treatment Hospitalisation Death or Disability	Consider the level of potential impacts on public health and safety in terms of physical harm, biological/chemical contamination harm etc.

3.7.4 Application of Consequence of Failure Weightings to Severity Scores

Following the evaluation and severity scoring of assets as per section 3.7.3, the consequence criteria weightings developed in section 3.6 were applied to determine the Consequence of Failure score. This involved multiplying each 1 to 5 score by its applicable global weighting, summating the results and dividing by 5 to determine the final Consequence of Failure score. An example of this process is demonstrated in Figure 3-17.

Example Consequence of Failure Score Calculation			
Category	Operational	**Total Category Weighting (%)**	27.14
Sub-Category	**Consequence Severity Score**	**Global Sub-Category Weighting (%)**	**Sub-Category Weighted Score**
Equivalent Population (EP) Impacted	3	5.66	3.39
Customer Type	4	1.31	1.04
Level of Redundancy	4	6.56	5.24

Failure Tolerance Period	2	13.62	5.44
		Operational Score	**15.13**
		Governance Score	8.61
		Environmental Score	6.84
		Reputation Score	1.46
		Financial Score	11.83
		Safety Score	3.05
		Overall Consequence of Failure Score	**46.93**

Figure 3-17: Example Weighted Consequence of Failure Score Calculation

3.8 Probability of Failure

As discussed in section 2.3.4, Probability of Failure is required to be determined for the ACA to be risk-based and have dynamic results suitable for prioritisation. Probability of Failure is hard to determine quantitatively without substantial historic data to analyse and is therefore typically a qualitative assessment for less mature organisations. The chance of an asset failing is inherently linked with an assets condition and is therefore a common approach used to determine the Probability of Failure (WERF 2007).

There are two approaches to asset condition assessment which include a field assessment by experienced personnel using industry driven guidelines and a desktop calculation of an assets age against its expected useful life ((Equation 6). A mixture of both approaches has been used in this study so that assets without field-based conditions can be given an estimated condition assessment score, and therefore a probability of failure. The estimated condition assessments are superseded with any available up to date field assessment data which can continue to be done as more data is collected over time.

$$\text{Estimated Condition Score} = \text{Round to Nearest Integer}\left(\frac{\textit{Asset Age}}{\text{Useful Life}} \times 5\right) \qquad \text{(Equation 6)}$$

The link between condition assessment score and probability of failure used in this study is defined in Table 3-13. The criticality analysis tool discussed in section 3.10 has been designed to round any intermediate condition assessment scores to the nearest whole number as the probability of failure scale is non-linear.

Table 3-13: Probability of Failure Definitions Based on Condition Assessment Score

Condition Assessment Score	Likelihood of Failure Assessment	Probability of Failure (%)	Description
5	Almost Certain	100	Expected to occur within a year
4	Very High	75	Estimated 75% chance of occurring in any year
3	High	50	Estimated 50% chance of occurring in any year
2	Moderate	25	Estimated 25% chance of occurring in any year
1	Low	10	Estimated 10% chance of occurring in any year

3.9 Overall Criticality Score

The overall criticality score has been calculated by combining the standalone criticality of an asset determined from its weighted consequences of failure, and its probability of failure based on condition. The overall score has a scale of 2-100 which is automatically calculated from the summary consequence of failure and probability of failure scores and is represented in Equation 7.

$$\text{Overall Criticality Score} = \frac{CoF \times PoF}{100} \qquad \text{(Equation 7)}$$

Where:
CoF = Consequence of Failure (refer sections 3.6/3.7)
PoF = Probability of Failure (refer section 3.8)

3.10 Asset Criticality Assessment Tool

The above process would be incredibly resource intensive to complete manually and therefore one of the goals of the study was to automate as much of the process as possible and allow assessment of upwards of 30,000 assets instantaneously. Due to the availability, widespread use and ability to develop fully customised documents, Microsoft Excel was used to develop the Asset Criticality Assessment Tool. Descriptions of what is covered within the tool is defined in Table 3-14. Ultimately an ACA should be integrated into GRC's AMS with live data access however a Microsoft Excel document is considered an appropriate intermediate solution. Example screenshots of the entire Asset Criticality Analysis tool have been provided in Appendix B.

Table 3-14: Asset Criticality Assessment Tool Excel Tabs and Descriptions

Excel Tab Name	Description/Purpose
Dashboard	The dashboard provides a visual representation of the number and classification of critical assets in the form of a graph, along with graphs of the water and sewerage criteria global weightings
Water Consequence Weightings	A summary table of the global water consequence weightings has been created that can be automatically adjusted by changing any of the Analytical Hierarchy Process based matrices for each of the criteria. The consistency of each matrix is verified by calculation
Sewerage Consequence Weightings	A summary table of the global sewerage consequence weightings has been created that can be automatically adjusted by changing any of the Analytical Hierarchy Process based matrices for each of the criteria.
Overall Criticality Score	A results summary page listing all assets including parent assets, summary scoring for each high level consequence of failure category, Overall Consequence of Failure score, Probability of Failure score, and Overall Asset Criticality Score.
CoF Score Calcs	A consequence of failure severity scoring page listing the scoring for each asset across all consequence of failure sub-categories.

PoF Score Calcs	A probability of failure scoring page listing the condition score or estimated condition rating and aligned probability of failure percentage.
Asset Data Input	Input of source asset data including asset class, parent asset name and asset name that are referenced from other sheets. It includes a check to ensure all source data assets have had an Overall Asset Criticality Score produced.

3.11 Chapter Summary

Chapter 3 described the development of a robust supporting framework and methodology for GRC WBU to perform an asset criticality analysis on water and sewerage assets.

- Available data sources were considered and used as much as practicable
- Asset classification and failure mode identification using a high-level FMEA was used to inform consequence of failure criteria which were aligned with GRC's risk management framework
- Consequence of failure criteria were successfully weighted utilising the AHP
- A consequence severity scoring scale was selected and definitions for each consequence of failure sub-category described
- Probability of failure scoring was aligned with known and estimated asset condition scoring
- The Overall Asset Criticality Score was defined utilising both the Overall Consequence of Failure Score and Probability of Failure Score.
- A Microsoft Excel Asset Criticality Analysis Tool was developed and semi-automated to allow analysis of large numbers of assets.

Chapter 4 Overview of Study Assets

4.1 Introduction

While the Asset Criticality Assessment Tool is intended to be applied to the full GRC WBU water and sewerage asset databases, the available time and resources were insufficient to complete this as part of the study. Instead, a selection of key assets from each category were considered and used to refine the framework and model calculations.

4.2 Water Study Assets

The assets selected in Table 4-1 represent some of most important active assets with respect to their function (i.e. Gympie Water Treatment Plant is the only water treatment facility for over 5000 EP) and one of the more independent water networks that could be more easily considered as a whole system.

Table 4-1: Water Assets with Criticality Analysis Applied as part of the Study

Water Asset Category	Case Study Assets or Schemes	Number of Assets Considered
Active Water Assets		
Water Bore	Rainbow Beach Bore TW1	5
Water Weirs	Kinbombi Creek Weir	3
Water Treatment Plant	Jones Hill Water Treatment Plant	82
Water Reservoirs	Gympie Wineglass Reservoir	4
Water Pump Station	Rainbow Beach Water Booster Pump Station	7
Passive Water Assets		
Water Mains	Rainbow Beach Water Network	219
Water Nodes	Rainbow Beach Water Network	339
Water Services & Meters	Rainbow Beach Water Network	2022
Total Number of Water Assets Considered - 2681		

4.2.1 Rainbow Beach Bore TW1

Rainbow Beach Bore TW1 is one of five Cooloola Sandmass sub-artesian basin ground water bores that are the only water supply source for Rainbow Beach. Four of the five bores including TW1 are still active. The bore depth is approximately 60m and produces approximately 9L/s. TW1 bore is critical as the tourist attraction Rainbow Beach is subject to highly increased water usage during peak holiday periods which can increase usage up to 500L/EP/Day.

Figure 4-1: Photo of Rainbow Beach Bore TW1

Table 4-2: Rainbow Beach Bore TW1 Assets with Criticality Analysis Applied as part of the Study

Asset Number	Asset Category	Asset Description
CIV.001468	Civil	Rainbow Beach Bore TW1 - Bore Structure
CIV.001472	Civil	Rainbow Beach Bore TW1 - Pipework
CSY.012043	Control Systems	Rainbow Beach Bore TW1 - Telemetry
ELE.001636	Electrical	Rainbow Beach Bore TW1 - Switchboard
WPU.001704	Water Pump	Rainbow Beach Bore TW1 - Bore Pump

4.2.2 Kinbombi Creek Weir

Kinbombi Creek Weir is a concrete weir structure over the ephemeral Kabobi Creek which is normally dry at the weir location. A large off-stream water storage lagoon has been constructed just upstream of the weir so that water held back by the weir fills the lagoon prior to overtopping.

Figure 4-2: Photo of Kinbombi Creek Weir

Table 4-3: Kinbombi Creek Weir Assets with Criticality Analysis Applied as part of the Study

Asset Number	Asset Category	Asset Description
CIV.001341	Civil	Kinbombi Creek Weir - Spillway / Embankment
CIV.001342	Civil	Kinbombi Creek Weir - Inlet Tower
CIV.001343	Civil	Kinbombi Creek Weir - Walkway

4.2.3 Jones Hill Water Treatment Plant

Jones Hill Water Treatment Plant is the only water treatment plant for the city of Gympie and surrounding suburbs. With the river intake well originally constructed in the late 1880's the plant has a long history with many outdated assets over the site, some still in use today. The treatment plant is able to produce up to 18ML of water per day based on 20-hour operation. The average daily water consumption by Gympie's 24493EP is 7.4ML which is approximately 41% of the total production capacity (GRC 2017c).

Treatment Processes (GRC 2017c):

- Inlet - Raw water pumped from Mary River. Impounded by licenced weir.
- Initial Dosing - Powered Activated Carbon (PAC) & Sodium Hydroxide.
- Coagulation - Aluminium Sulfate (Alum), Aluminium Chlorohydrate (ACH), Polyaluminium chloride (PACl) and polyDADMAC via flash mixer.
- Flocculation – Polyelectrolyte introduced in first of four chambers and horizontal paddle stirred.
- Sedimentation – Sludge periodically scraped and drained to recovery tank.
- Filtration - 6 x Rapid Sand Gravity Filters. Filter backwash tank supplied from reservoir. Backwash water drained to recovery tank.
- Secondary Dosing – Sodium Fluoride and Sodium Hydroxide.
- Clear Water Tank – Pumped to reservoirs.
- Disinfection – During pumping to reservoir clear water is dosed with Chlorine Gas.

- Sludge Recovery/Disposal – Recovery tank water is processed with supernatant returned to coagulation flash mixer while the thickened sludge is belt-pressed before being sent to landfill.

Figure 4-3: Photo of Jones Hill Water Treatment Plant

Table 4-4: Jones Hill Water Treatment Plant Assets with Criticality Analysis Applied as part of the Study

Asset Category	Number of Assets	Asset Types Considered
Buildings	1	Buildings
Civil	24	Structures/Tanks, Pipework, Valves, Bunding, Siteworks
Control Systems	7	PLC, HMI, Site Control
Electrical	4	Switchboards, Site Electrical
Water Plant & Equipment	29	General Mechanical, Scrapers, Mixers, Crane/Gantry's, Chemical Dosing, Air Dryer/Compressor
Water Pump	17	Raw Water Pumps, Clear Water Pumps, Dosing Pumps

4.2.4 Wineglass High-Level Reservoir

The Wineglass High-Level Reservoir in Gympie maintains water pressure to around 300-400 properties that are located at the same level as the two 10ML ground reservoirs which supply the rest of Gympie. The reservoir is located at the highest point in Gympie at 125m AHD. Water is pumped from the nearby reservoirs to a small tank at the top of the tower and gravity fed to the high-level network.

Figure 4-4: Photo of Wine Glass High Level Reservoir

Table 4-5: Wine Glass High Level Reservoir Assets with Criticality Analysis Applied as part of the Study

Asset Number	Asset Category	Asset Description
CIV.001390	Civil	Wine Glass High Level Reservoir - Structure
CIV.001391	Civil	Wine Glass High Level Reservoir - Pipework
CIV.001392	Civil	Wine Glass High Level Reservoir - Valves
CSY.012015	Control Systems	Wine Glass High Level Reservoir - Telemetry

4.2.5 Rainbow Beach Water Booster Pump Station

The Rainbow Beach Water Booster Pump Station is an online booster pump that assists the supply of water from the Rainbow Beach Water Treatment Plant to the Rainbow Beach Water Reservoirs. The booster pump (28m AHD) station is approximately 1.6km from the treatment plant (25m AHD) and 1.2km from the reservoir (89m AHD).

Figure 4-5: Photo of Rainbow Beach Water Booster Pump Station

Table 4-6: Rainbow Beach Water Booster Pump Station Assets with Criticality Analysis Applied as part of the Study

Asset Number	Asset Category	Asset Description
BLD.00394	Buildings	Rainbow Beach Water Booster Pump Station - Building
CIV.001451	Civil	Rainbow Beach Water Booster Pump Station - Pipework
CSY.012036	Control Systems	Rainbow Beach Water Booster Pump Station - Controls
CSY.012037	Control Systems	Rainbow Beach Water Booster Pump Station - Telemetry
ELE.001630	Electrical	Rainbow Beach Water Booster Pump Station - Switchboard
WPU.001697	Water Pump	Rainbow Beach Water Booster Pump Station – Booster Pump 2
WPU.001698	Water Pump	Rainbow Beach Water Booster Pump Station – Booster Pump 1

4.2.6 Rainbow Beach Water Network

The Rainbow Beach Water Network includes 29km of water pipes, 339 valves/hydrants and 1011 property services/water meters. The majority of the network is made up of DN 100/150 reticulation mains with a few DN 225/300 spine trunk mains.

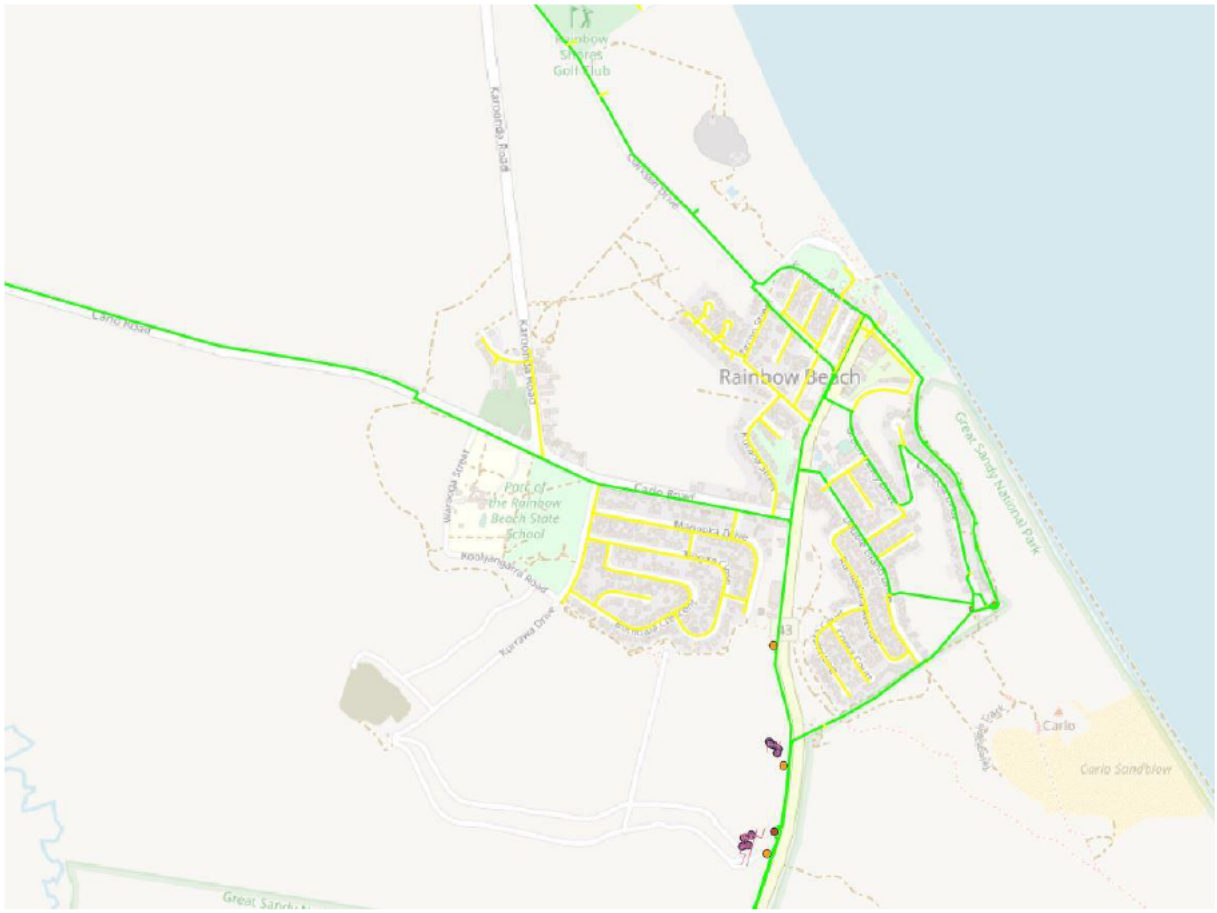


Figure 4-6: Map of Rainbow Beach Water Network (Trunk Mains – Green, Reticulation Mains – Yellow)

Table 4-7: Rainbow Beach Water Network Assets with Criticality Analysis Applied as part of the Study

Asset Category	Number of Assets	Asset Types Considered
Hydrants	193	Hydrants
Pipe	219	Trunk Mains, Reticulation Mains
Valves	146	Air Valves, Scour Valves, Sluice Valves
Water Meter & Services	2022	Water Services, Water Meters

4.3 Sewerage Study Assets

The assets selected in Table 4-8 represent some of most important active assets (i.e. Gympie Sewerage Treatment Plant) and one of the more independent sewerage networks that could be more easily considered as a whole system.

Table 4-8: Sewerage Assets with Criticality Analysis Applied as part of the Study

Sewerage Asset Category	Case Study Assets or Schemes	Number of Assets Considered
Active Sewerage Assets		
Sewerage Treatment Plant	Gympie Sewerage Treatment Plant	144

Sewerage Pump Station	Gympie Sewerage Pump Station G1	10
Passive Water Assets		
Sewerage Mains	Rainbow Beach Sewerage Network	453
Sewerage Nodes	Rainbow Beach Sewerage Network	427
Sewerage Services	Rainbow Beach Sewerage Network	1011
Total Number of Sewerage Assets Considered - 2045		

4.3.1 Gympie Sewerage Treatment Plant

The Gympie Sewerage Treatment Plant is the only treatment plant for the city of Gympie and surrounding suburbs. The plant was upgraded to a modern Biological Nutrient Removal (BNR) plant in 2009 and has a Peak Wet Weather Flow (PWWF) capacity of 30ML with an Average Dry Weather Flow (ADWF) of approximately 3.69 ML/Day (GRC 2017c).

Treatment Processes (GRC 2017c):

- Inlet Works – Bar screen, screw compactor/conveyor and grit chamber. Screenings and grit to landfill. Magnesium Hydroxide is dosed at this point.
- Flow Balance Tanks – Influent is dosed with Magnesium Hydroxide before entering 3 x flow balance tanks.
- Anaerobic Tank – Influent & RAS enter first of four chambers where it is dosed with Aluminium Sulfate (Alum). Flow enters Oxidation Ditch.
- Oxidation Ditch – Influent, clarifier scum return and filtrate return are dosed with Aluminium Sulfate (Alum) during processing. Processed water is again dosed with Aluminium Sulfate (Alum) when drawn off to clarifiers. Scum is harvested and pumped to Aerobic Digesters.
- Aerobic Digesters – Oxidation Ditch scum and part of the RAS flow enter the first of three chambers. Processed water is sent to the Belt Filter Press.
- Clarification – 2 x clarifiers. Effluent drained to disinfection contact tank. Sludge drained to RAS PS with most flow returned to Anaerobic Tank and partial flow diverted to Aerobic Digester. Scum returned via Scum PS to Oxidation Ditch or partial flow diverted to Anaerobic Tank.

Figure 4-7: Photo of Gympie Sewerage Treatment Plant

Table 4-9: Gympie Sewerage Treatment Plant Assets with Criticality Analysis Applied as part of the Study

Asset Category	Number of Assets	Asset Types Considered
Buildings	2	Buildings
Civil	45	Inlet Works, Structures/Tanks, Pipework, Valves, Bunding, Lagoons, Siteworks
Control Systems	29	PLC, HMI, Site Control, Instrumentation
Electrical	6	Switchboards, Site Electrical
Sewer Plant & Equipment	51	General Mechanical, Scrapers, Mixers, Crane/Gantry's, Chemical Dosing, Air Diffusers/Compressor
Sewer Pump	11	Process Transfer Pumps, Dosing Pumps

4.3.2 Gympie Sewerage Pump Station G1

The Gympie Sewerage Pump Station G1 is one of the four biggest pump stations out of a total of forty-seven in the Gympie sewerage network. Being built in the 1960's, an above ground design was used with the structure 1/3 wet well and 2/3 dry well. It is the closest pump station to the treatment plant and is capable of taking increased flows from upstream pump stations during wet weather or potential rising main failures.

Figure 4-8: Photo of Gympie Sewerage Pump Station G1

Table 4-10: Gympie Sewerage Pump Station G1 Assets with Criticality Analysis Applied as part of the Study

Asset Number	Asset Category	Asset Description
CIV.001053	Civil	Gympie Sewerage Pump Station G1 - Pipework
CIV.001054	Civil	Gympie Sewerage Pump Station G1 - Superstructure
CIV.001055	Civil	Gympie Sewerage Pump Station G1 - Valve pit
CSY.011835	Control Systems	Gympie Sewerage Pump Station G1 - Instrumentation
CSY.011836	Control Systems	Gympie Sewerage Pump Station G1 - Telemetry
ELE.001525	Electrical	Gympie Sewerage Pump Station G1 - Switchboard
SPE.048151	Sewer Plant & Equipment	Gympie Sewerage Pump Station G1 - Mechanical
SPE.048152	Sewer Plant & Equipment	Gympie Sewerage Pump Station G1 - Ventilation
SPU.047962	Sewer Pump	Gympie Sewerage Pump Station G1 - Pump 2
SPU.047963	Sewer Pump	Gympie Sewerage Pump Station G1 - Pump 1

4.3.3 Rainbow Beach Sewerage Network

The Rainbow Beach Sewerage Network includes 32km of sewerage pipes, 427 manholes/valves and 1011 house connection branches. The majority of the network is made up of DN 100/150 reticulation

mains with a DN 225 spine trunk mains and DN 63/100/225 Rising Mains. Sewerage is transported to the Rainbow Beach Sewerage Treatment Plant.

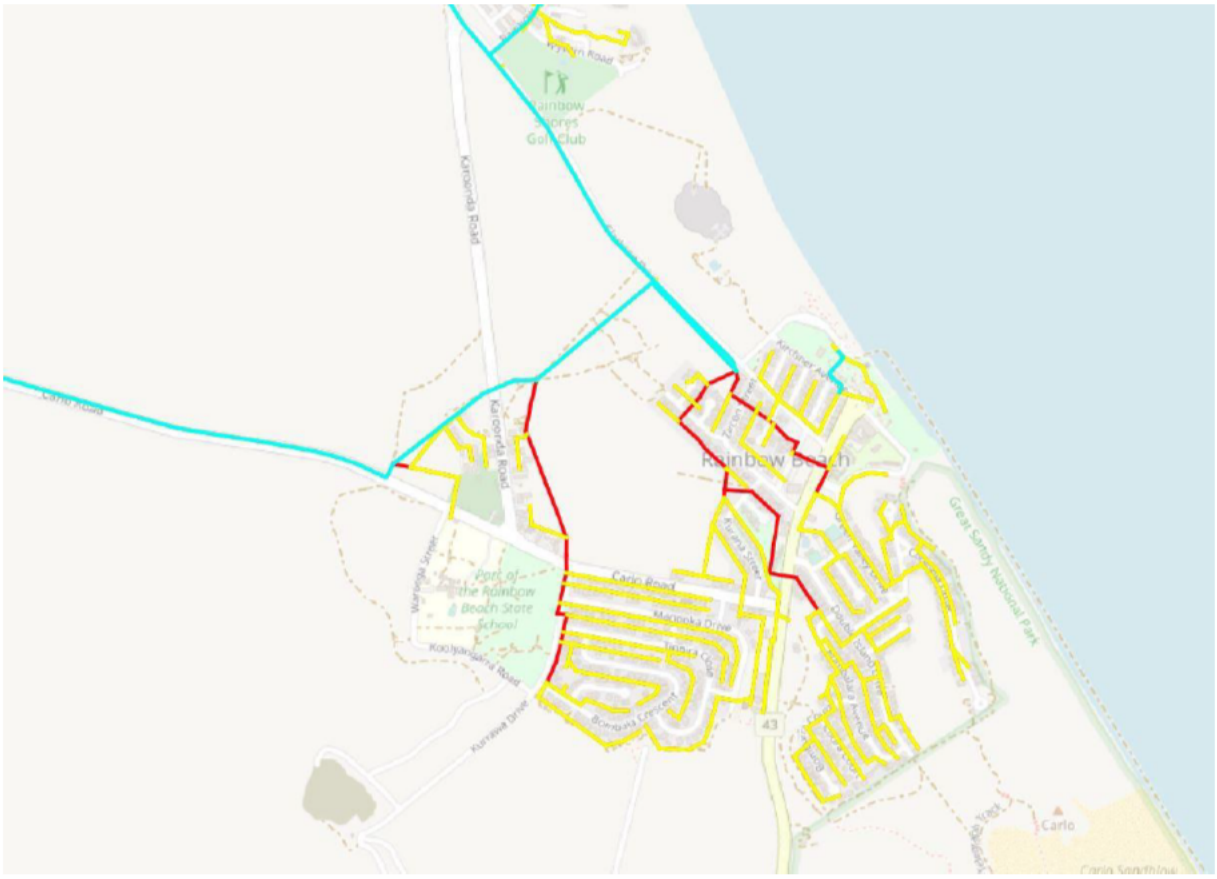


Figure 4-9: Map of Rainbow Beach Sewerage Network (Trunk Mains – Red, Reticulation Mains – Yellow, Rising Mains - Cyan)

Table 4-11: Rainbow Beach Sewerage Network Assets with Criticality Analysis Applied as part of the Study

Asset Category	Number of Assets	Asset Types Considered
Sewerage Pipe	453	Trunk Mains, Reticulation Mains, Rising Mains
Nodes	427	Sewer Manholes, Sewer Inspection Openings
Sewerage Services	1011	Sewerage House Connection Branches

4.4 Chapter Summary

Chapter 4 provided an overview of the assets that the Asset Criticality Assessment Tool was applied to as part of this dissertation. The assets were selected from every asset category and type used by GRC to ensure the tool was applicable across the entire data register. It would have been beneficial to test the tool on more assets however due to time and resource constrains this was not completed as part of the dissertation.

Chapter 5 Performing the Asset Criticality Analysis

5.1 Introduction

With the ACA framework developed as discussed in Chapter 3 the Asset Criticality Analysis Tool was able to be applied to the study assets described in Chapter 4. The process used for active and passive assets has been briefly described in the following sections.

To make data collection and scoring processes easier, a Scoring Assistance Tool was developed to complement the Asset Criticality Analysis Tool. The Scoring Assistance Tool is a spreadsheet that stores all the raw asset data required for the Asset Criticality Analysis Tool and provides a workspace for the calculation of consequence scores automatically via formulas or via manual entry.

Due to time and resource constraints, asset data validation was not completed as part of the analysis. It is recommended that this is completed prior to utilising the results of the analysis to maximise the accuracy of the results. The definition of active and passive assets can be found in section 3.3.1.

5.2 Application Process for Active Assets

5.2.1 Scoring Assistance Tool

A Scoring Assistance Tool was developed as a working space to automatically calculate severity scores based on input data such as asset replacement cost, water/sewerage produced/treated and estimated population affected by failure.

5.2.2 Data Collection & Import for Active Assets

Asset data was extracted from Assetic Cloud and the MapInfo GIS in multiple Microsoft Excel spreadsheets, one for each asset category. The selected study assets relevant attribute data was imported into the Scoring Assistance Tool under a separate sheet for each asset category.

Relevant asset attribute data imported included:

- Asset Number
- Asset Category
- Parent Asset Name
- Asset Name
- Replacement Cost
- Condition Score
- Construction Date
- Useful Life (Years)
- Estimated Water Produced/Sewerage Collected
- Estimated EP Serviced
- Estimated Revenue Generated (water assets only)

No parent assets were considered in the data import as they would effectively duplicate child assets and their usefulness as a summary asset in terms of criticality was questionable.

Asset Number	Asset Class	Asset Category	Parent Asset Name	Asset Name	Asset Replacement Cost	Estimated Water Produced/Supplied (kL)	Estimated EP Serviced	$2.09 Asset Estimated Revenue Generated
CIV.001468	Water	Civil	Rainbow Beach Bore TWS1	Bore Structure	$ 14,020.12	583	2423	$ 1,218.89
CIV.001472	Water	Civil	Rainbow Beach Bore TWS1	Pipework	$ 8,745.04	583	2423	$ 1,218.89
CSY.012043	Water	Control Systems	Rainbow Beach Bore TWS1	Telemetry	$ 17,192.58	0	0	$ -
ELE.001636	Water	Electrical	Rainbow Beach Bore TWS1	Switchboard	$ 25,215.78	583	2423	$ 1,218.89
WPU.001704	Water	Water Pump	Rainbow Beach Bore TWS1	Pump Bore	$ 20,135.16	583	2423	$ 1,218.89

Figure 5-1: Screenshot of Scoring Assistance Tool Consequence Scoring Input Data for Active Assets

5.2.3 Consequence of Failure Scoring

Due to the relatively small number of active assets selected for the study, each asset was individually assessed and scored across all consequence criteria as defined in section 3.7. These scores were developed in the Scoring Assistance Tool before being imported into the Asset Criticality Analysis Tool in bulk.

Asset Number	Operational				Governance		Environmental		Reputation		Financial					Safety	
	Equivalent Population (EP) Impacted Score	Customer Type Score	Level of Redundancy Score	Failure Tolerance Period Score	Level of Potential Compliance Exceedance Score	Reporting Requirements Score	Proximity to Sensitive Areas Score	Level of Potential Contamination/Damage Score	Media Attention Score	Visibility to Public Score	Asset Cost Score	Difficulty of Repair Score	Type of Third Party Score	Number of Impacted Parties Score	Cost of Lost Revenue Score	Equivalent Population (EP) Impacted Score	Level of Potential Impact Score
CIV.001468	3	4	4	2	1	3	5	3	2	1	2	4	3	4	2	1	1
CIV.001472	3	4	2	2	1	2	4	2	3	3	1	1	3	4	2	1	4
CSY.012043	1	1	3	2	1	2	1	1	2	1	2	3	1	1	1	1	1
ELE.001636	3	4	4	2	1	2	1	1	2	1	2	3	3	4	2	1	5
WPU.001704	3	4	3	2	1	2	5	3	2	1	2	2	3	4	2	1	1

Figure 5-2: Example Screenshot of Scoring Assistance Tool Consequence Scoring

5.2.4 Probability of Failure Scoring

All active assets considered in the study had condition scoring data up to date as of 30/06/2018. These scores were entered into the Scoring Assistance Tool before being imported into the Asset Criticality Analysis Tool in bulk.

Asset Number	Asset Condition Score	Asset Construction Date	Asset Useful Life (Years)
CIV.001468	3	30/06/2005	60
CIV.001472	3	30/06/2005	80
CSY.012043	3	30/06/2005	15
ELE.001636	3	30/06/2005	25
WPU.001704	3	30/06/2005	40

Figure 5-3: Example Screenshot of Scoring Assistance Tool Probability of Failure Inputs

5.3 Application Process for Passive Assets

5.3.1 Data Collection & Import for Passive Assets

Asset data was extracted from Assetic Cloud and the MapInfo GIS in multiple Microsoft Excel spreadsheets, one for each asset category. The selected study assets relevant attribute data was imported into the Scoring Assistance Tool under a separate sheet for each asset category.

Relevant asset attribute data imported included:

- Asset Number
- Asset Category
- Asset Name
- Replacement Cost
- Pipe Size
- Pipe Length
- Condition Score
- Construction Date
- Useful Life (Years)
- Estimated Water Produced/Sewerage Collected
- Estimated EP Serviced
- Estimated Revenue Generated (water assets only)

Asset Number	Asset Class	Asset Category	Asset Name	Asset Replacement Cost	Pipe/ Node Size (mm)	Pipe Length (m)	Estimated Water Produced/ Supplied (kL)	Estimated EP Serviced	$2.09 Asset Estimated Revenue Generated
WMA.008776	Water	Pipe	Water 100 AC: Nodes 21 - 19	$ 15,416.00	100	100	4.383	12	$ 9.16
WMA.008777	Water	Pipe	Water 100 AC: Nodes 20 - 46	$ 11,253.68	100	73	3.199	9	$ 6.69
WMA.008779	Water	Pipe	Water 100 AC: Nodes 15 - 16	$ 27,748.80	100	180	7.889	21	$ 16.49
WMA.008781	Water	Pipe	Water 100 AC: Nodes 42 - 37	$ 19,115.84	100	124	5.435	15	$ 11.36
WMA.008782	Water	Pipe	Water 100 AC: Nodes 39 - 38	$ 4,470.64	100	29	1.271	3	$ 2.66
WMA.008785	Water	Pipe	Water 100 AC: Nodes 10 - 12	$ 53,956.00	100	350	15.340	41	$ 32.06

Figure 5-4: Example Screenshot of Scoring Assistance Tool Consequence Scoring Input Data for Passive Assets

5.3.2 Consequence of Failure Scoring

Due to the large number of passive assets selected for the study, semi-automated formulas and assumptions were used to score the assets (as defined in section 3.7) wherever possible however some manual scoring was required due to the lack of usable asset spatial and modelling data as discussed in section 5.5. These scores were developed in the Scoring Assistance Tool before being imported into the Asset Criticality Analysis Tool in bulk.

Refer to section 5.2.3 and Figure 5-2 for a visual representation.

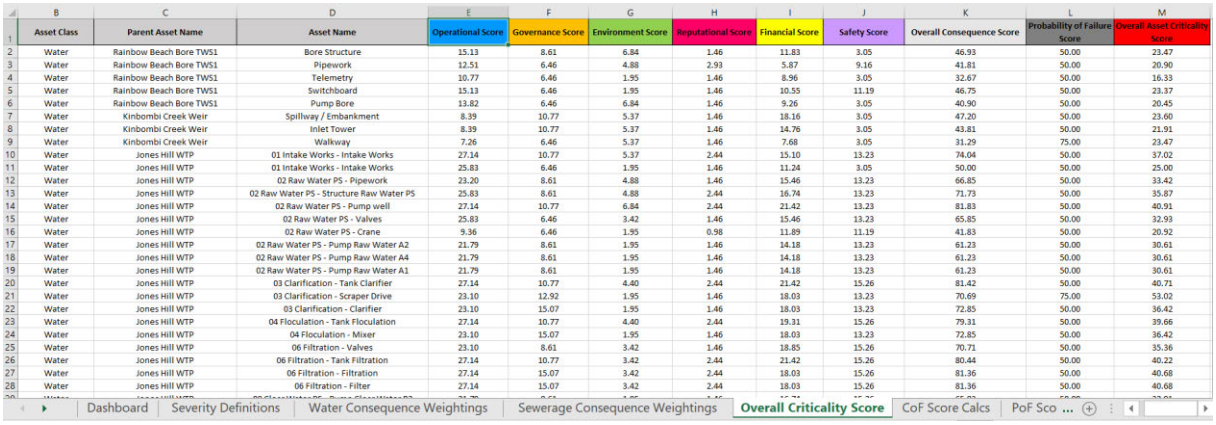
5.3.3 Probability of Failure Scoring

No passive assets considered in the study had condition scoring data within Assetic Cloud. Instead, condition scores were estimated based on the assets useful life and current asset age. The assets useful life and current asset age were entered into the Scoring Assistance Tool before being imported into the Asset Criticality Analysis Tool in bulk.

Refer to section 5.2.4 and Figure 5-3 for a visual representation.

5.4 Criticality Analysis Scoring

The Consequence of Failure and Probability of Failure scoring data was imported into the Asset Criticality Analysis Tool from the Scoring Assistance Tool which automatically calculated the overall Consequence of Failure score (section 3.7), Probability of Failure score (section 3.8) and Overall Asset Criticality scores using the formula defined in section 3.9. A screenshot of the results page is shown in Figure 5-5 and higher resolution screenshots of the entire Asset Criticality Analysis tool have been provided in Appendix B.



	Asset Class	Parent Asset Name	Asset Name	Operational Score	Governance Score	Environment Score	Reputational Score	Financial Score	Safety Score	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
2	Water	Rainbow Beach Bore TWS1	Bore Structure	15.13	8.61	6.84	1.46	11.83	3.05	46.93	50.00	23.47
3	Water	Rainbow Beach Bore TWS1	Pipework	12.51	6.46	4.88	2.93	5.87	9.16	41.81	50.00	20.90
4	Water	Rainbow Beach Bore TWS1	Telemetry	10.77	6.46	1.95	1.46	8.96	3.05	32.67	50.00	16.33
5	Water	Rainbow Beach Bore TWS1	Switchboard	15.13	6.46	1.95	1.46	10.55	11.19	46.75	50.00	23.37
6	Water	Rainbow Beach Bore TWS1	Pump Bore	13.82	6.46	6.84	1.46	9.26	3.05	40.90	50.00	20.45
7	Water	Kinbombi Creek Weir	Spillway / Embankment	8.39	10.77	5.37	1.46	18.16	3.05	47.20	50.00	23.60
8	Water	Kinbombi Creek Weir	Inlet Tower	8.39	10.77	5.37	1.46	14.76	3.05	43.81	50.00	21.91
9	Water	Kinbombi Creek Weir	Walkway	7.26	6.46	5.37	1.46	7.68	3.05	31.29	75.00	23.47
10	Water	Jones Hill WTP	01 Intake Works - Intake Works	27.14	10.77	5.37	2.44	15.10	13.23	74.04	50.00	37.02
11	Water	Jones Hill WTP	01 Intake Works - Intake Works	25.83	6.46	1.95	1.46	11.24	3.05	50.00	50.00	25.00
12	Water	Jones Hill WTP	02 Raw Water PS - Pipework	23.20	8.61	4.88	1.46	15.46	13.23	66.85	50.00	33.42
13	Water	Jones Hill WTP	02 Raw Water PS - Structure Raw Water PS	25.83	8.61	4.88	2.44	16.74	13.23	71.73	50.00	35.87
14	Water	Jones Hill WTP	02 Raw Water PS - Pump well	27.14	10.77	6.84	2.44	21.42	13.23	81.83	50.00	40.91
15	Water	Jones Hill WTP	02 Raw Water PS - Valves	25.83	6.46	3.42	1.46	15.46	13.23	65.85	50.00	32.93
16	Water	Jones Hill WTP	02 Raw Water PS - Crane	9.36	6.46	1.95	0.98	11.89	11.19	41.83	50.00	20.92
17	Water	Jones Hill WTP	02 Raw Water PS - Pump Raw Water A2	21.79	8.61	1.95	1.46	14.18	13.23	61.23	50.00	30.61
18	Water	Jones Hill WTP	02 Raw Water PS - Pump Raw Water A4	21.79	8.61	1.95	1.46	14.18	13.23	61.23	50.00	30.61
19	Water	Jones Hill WTP	02 Raw Water PS - Pump Raw Water A1	21.79	8.61	1.95	1.46	14.18	13.23	61.23	50.00	30.61
20	Water	Jones Hill WTP	03 Clarification - Tank Clarifier	27.14	10.77	4.40	2.44	21.42	15.26	81.42	50.00	40.71
21	Water	Jones Hill WTP	03 Clarification - Scraper Drive	23.10	12.92	1.95	1.46	18.03	13.23	70.69	75.00	53.02
22	Water	Jones Hill WTP	03 Clarification - Clarifier	23.10	15.07	1.95	1.46	18.03	13.23	72.85	50.00	36.42
23	Water	Jones Hill WTP	04 Floculation - Tank Floculation	27.14	10.77	4.40	2.44	19.31	15.26	79.31	50.00	39.66
24	Water	Jones Hill WTP	04 Floculation - Mixer	23.10	15.07	1.95	1.46	18.03	13.23	72.85	50.00	36.42
25	Water	Jones Hill WTP	06 Filtration - Valves	23.10	8.61	3.42	1.46	18.85	15.26	70.71	50.00	35.36
26	Water	Jones Hill WTP	06 Filtration - Tank Filtration	27.14	10.77	3.42	2.44	21.42	15.26	80.44	50.00	40.22
27	Water	Jones Hill WTP	06 Filtration - Filtration	27.14	15.07	3.42	2.44	18.03	15.26	81.36	50.00	40.68
28	Water	Jones Hill WTP	06 Filtration - Filter	27.14	15.07	3.42	2.44	18.03	15.26	81.36	50.00	40.68

Dashboard | Severity Definitions | Water Consequence Weightings | Sewerage Consequence Weightings | Overall Criticality Score | CoF Score Calcs | PoF Sco ...

Figure 5-5: Asset Criticality Analysis Tool – Overall Criticality Score Sheet

5.5 Asset Data Gap Analysis

After applying the scoring process, it was clear that there were some gaps in asset data that once filled would be highly beneficial to improving to automation and accuracy of scoring. These data gaps did not prevent scoring of any assets but required more manual scoring and consideration that may not be feasible for significant numbers of assets.

5.5.1 GIS Spatial to Asset Data Link

There is a linking data field in place between the GIS and AMS however over time the accuracy and updating of the field has not been effectively maintained to the point that spatial queries using QGIS were not able to be utilised to help with scoring as the GIS reference could not be matched to a corresponding Asset ID. This highlights the importance of a 1-to-1 relationship between the systems and should be a priority for GRC WBU to rectify.

5.5.2 Modelling Software

GRC WBU recently obtained modelling software and have begun preliminary modelling and verification of the water and sewerage networks. Access to this data and software was unable to be arranged but would have greatly increased the automation and accuracy of items like Equivalent Population Effected and helped identify the severity of leakage or overflow events.

5.5.3 Asset Data Accuracy

Generally, the asset data for active assets is very high level compared to other water authorities with major treatment processes or asset groups summarised as one item rather than breaking down into individual assets. This has the affect that all assets within the treatment process are given the same condition rating and cannot be prioritised effectively. There is also bare minimum asset data in that common information like pumping capacities and switchboard input powers etc. have not been collected.

With respect to passive assets, the asset data is generally sufficient and in line with other water authorities however there is some question of the currency of the data and suitable linkage to the GIS system. The key aspect of missing data is relevant condition scoring for the majority of assets which meant that all passive assets utilised estimated condition scoring in the ACA tool.

5.6 Chapter Summary

Chapter 5 discussed the process used to apply the framework developed in Chapter 3 to the study assets described in Chapter 4 and provided visual examples to aid in understanding. The key process elements included:

- Data Collection & Import into the Scoring Assistance Tool
- Consequence of Failure Scoring in the Scoring Assistance Tool as per section 3.5
- Probability of Failure Scoring in the Scoring Assistance Tool as per section 3.8
- Overall Asset Criticality Scoring in the Asset Criticality Analysis Tool as per section 3.9

Chapter 6 Analysis of Results

6.1 Introduction

The Asset Criticality Analysis was completed using the developed tool and process described in Chapter 5. This chapter analyses the results and provides commentary on the results with respect to validity and original expectations.

The results include a graphical representation of all assets for parent assets with 10 or less child assets, and the top 10 critical assets for all other asset categories. The graphs show the static Overall Consequence Score and dynamic Overall Asset Criticality Score to help give an appreciation of the influence the Probability of Failure has on the level of asset criticality and risk.

6.2 Water Asset Criticality Scoring

The Asset Criticality Analysis was performed on 2681 water assets across each of the eight asset categories with the full detailed results provided in Appendix C.

6.2.1 Rainbow Beach Bore TW1

The results of the Asset Criticality Analysis for the Rainbow Beach Bore TW1 are presented in Figure 6-1 and Figure 6-2.

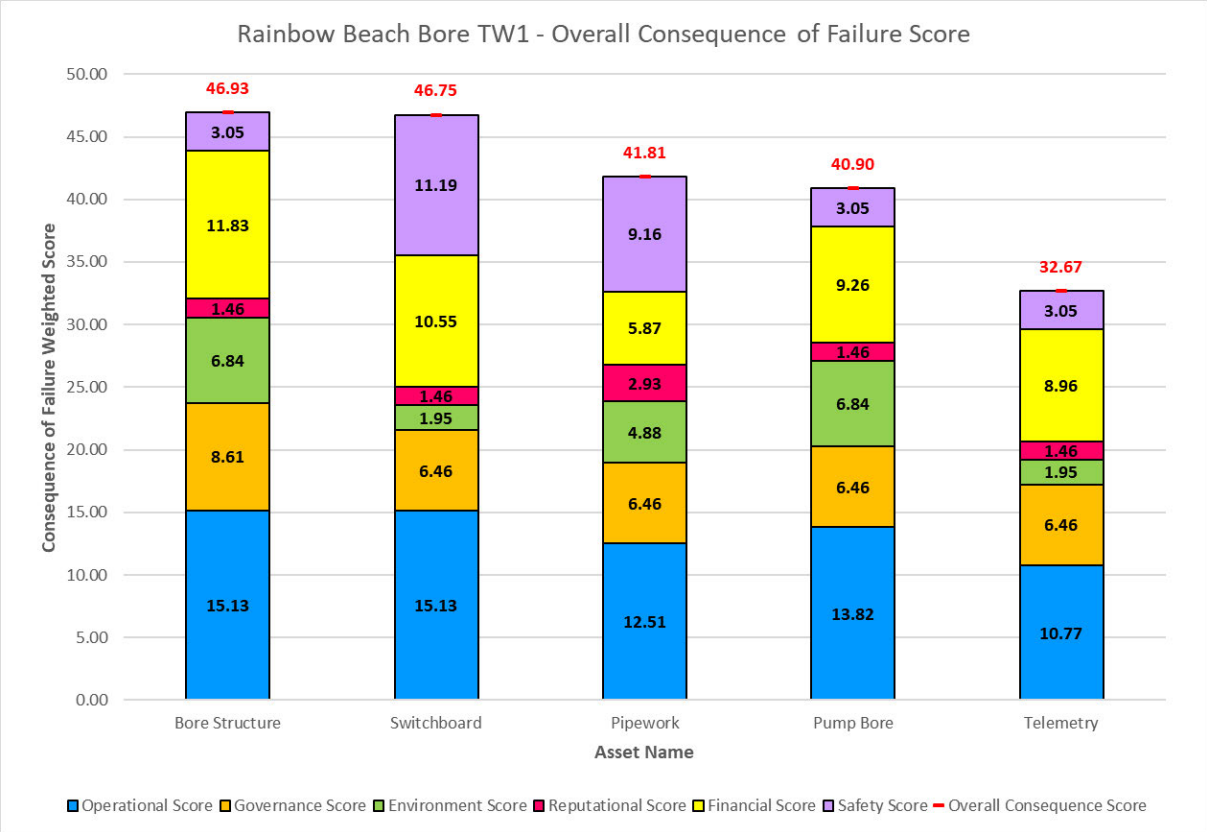


Figure 6-1: Rainbow Beach Bore TW1 – Overall Consequence of Failure Scores

In terms of consequence of failure only, the bore structure is the most critical asset with a consequence score of 46.93, closely followed by the bore's switchboard on 46.75. This appears to be appropriate as no water can be produced if the bore structure fails, it is difficult, lengthy and costly to repair and has the potential to directly contaminate the aquifer. Similarly, no water can be sourced if the switchboard fails which can be expensive to repair or replace. The switchboard has a relatively high safety rating due to the potential for electrocution and arc flash resulting in death. Pipework is the next most critical asset with a score of 41.81 for similar reasons to the bore structure and switchboard, however due to its relatively low cost and ease of repair its consequence of failure is somewhat lessened. It has the highest reputation score due to its visibility to the public (i.e leaking water). Just below pipework is the bore pump with a score of 40.90. Its relatively low safety score is due to the fact that it is located at the bottom of the bore with little potential to cause impact. Conversely, it had the equal highest potential to cause environmental impacts due to its location. Like pipework, bore pumps are relatively easy to repair or replace. The least critical asset was the telemetry system with a score of 32.67 as it was not critical for the bore to produce water (its primary function) but was important for compliance and efficient operations. Overall the consequence scoring aligned with expectations and appeared reasonable.

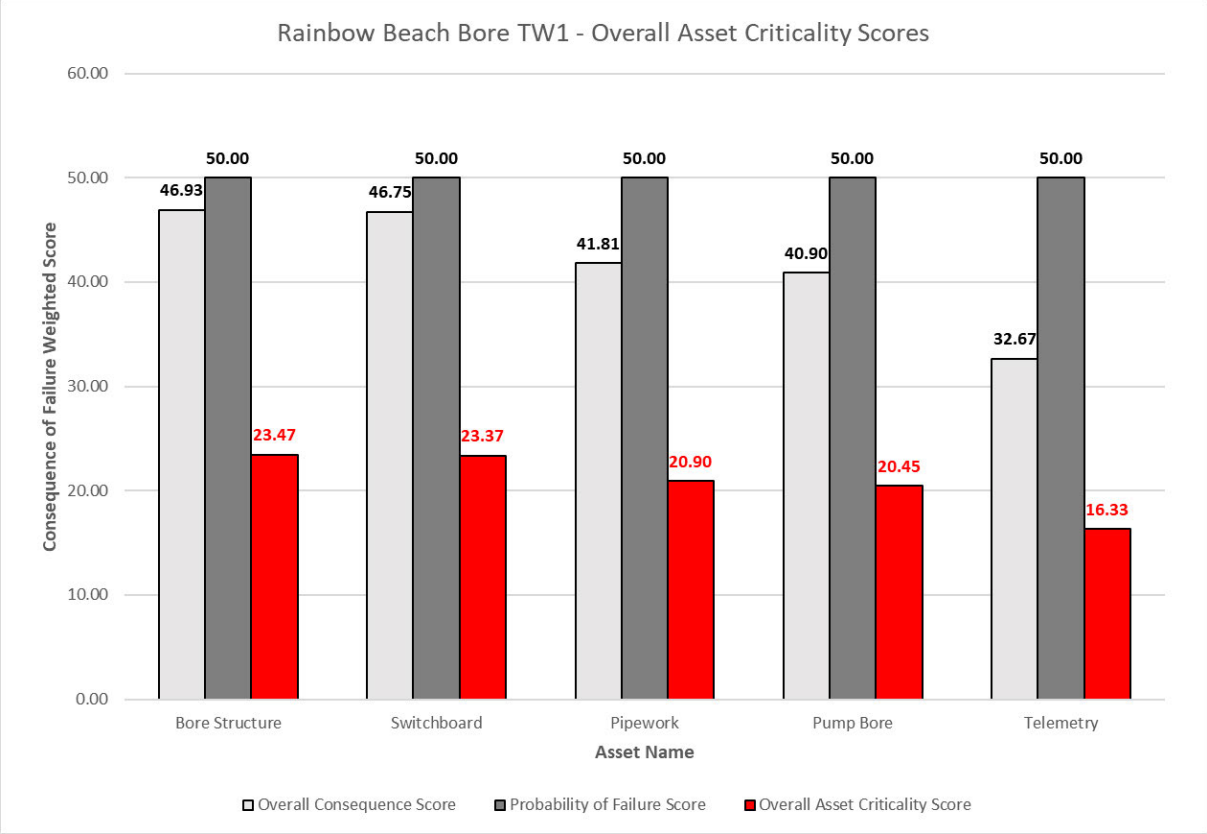


Figure 6-2: Rainbow Beach Bore TW1 – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, the pattern is repeated with a probability of failure of 50% being applied to all five assets. With overall consequence of failure scores of 32.67—46.93 out of 100 and asset criticality scores ranging between 16.33-23.47 out of 100 it can be reasoned that while the bore is moderate to low critical, and it is in fair condition. Overall the asset criticality scores aligned with expectations and appear reasonable.

6.2.2 Kinbombi Creek Weir

The results of the Asset Criticality Analysis for the Kinbombi Creek Weir are presented in Figure 6-3 and Figure 6-4.

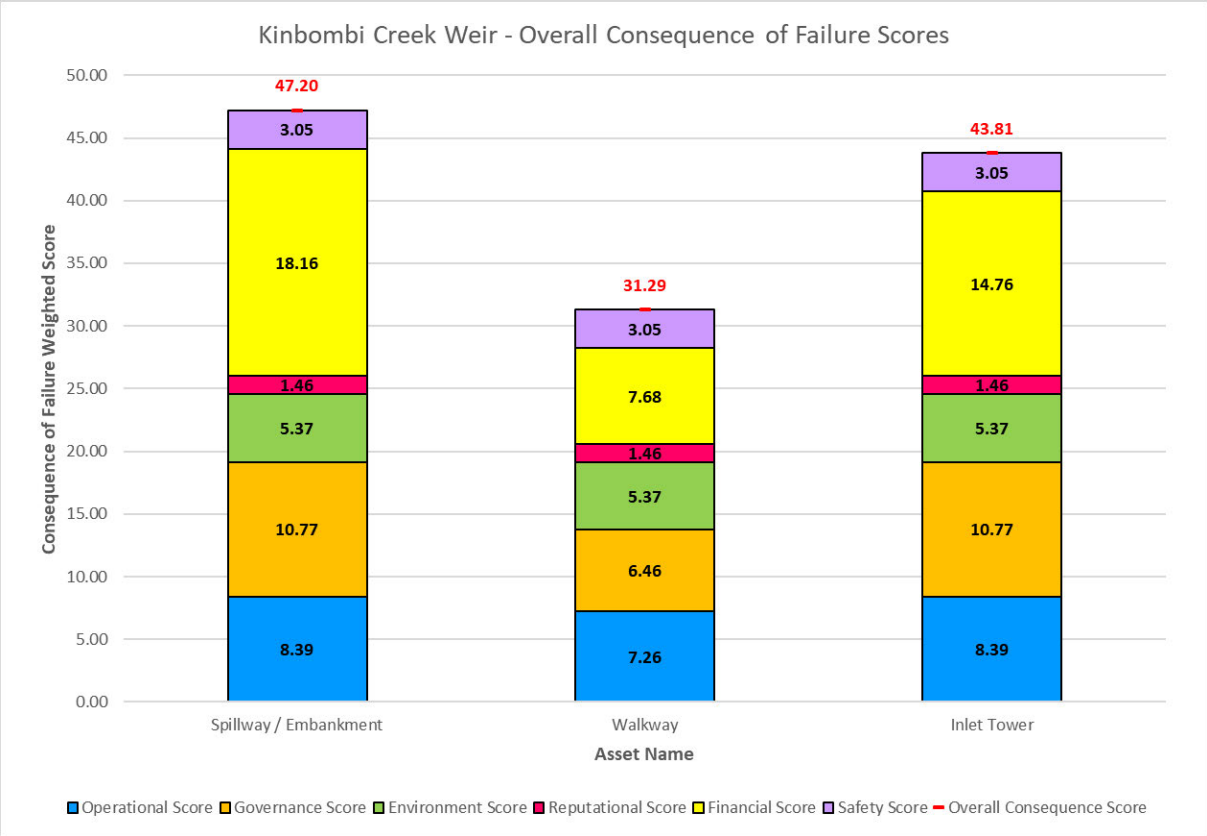


Figure 6-3: Kinbombi Creek Weir – Overall Consequence of Failure Scores

In terms of consequence of failure only, the spillway/embankment is the most critical asset with a consequence score of 47.20, followed by the water inlet tower on 43.81. This appears to be appropriate as no water can be impounded and collected if the spillway/embankment fails, it is difficult, lengthy and costly to repair and has the potential to contaminate downstream of Kinbombi Creek. Similarly, no water can be sourced if the inlet tower fails which would be difficult to repair or replace within the dam structure. The least critical asset was the inlet tower walkway with a score of 31.29 as it was not critical for weir to collect or distribute water (its primary function) but was important for access to the inlet tower. Overall the consequence scoring aligned with expectations and appeared reasonable.

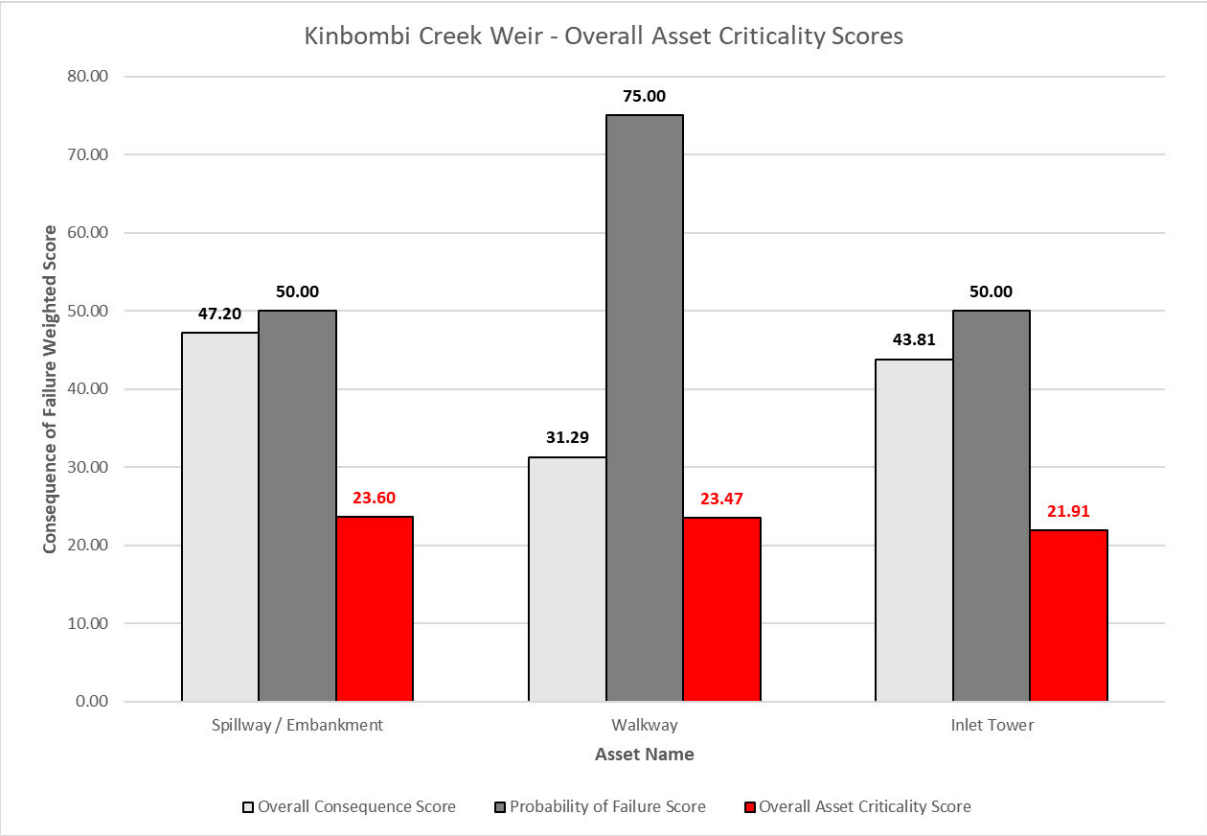


Figure 6-4: Kinbombi Creek Weir – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, the scoring is much closer across the three assets due to a difference in condition ratings. The notable difference is the walkway with a probability of failure of 75% which has increased the criticality of the walkway to just below the spillway/embankment and above the inlet tower. At first glance the walkway score doesn't align with expectations as it is a non-critical component of the weir in terms of function (i.e. not required to produce water). However, when considering that the other components are in relatively fair condition and are less likely to fail, the walkway becomes the highest risk and therefore priority between the three assets. If repairs or maintenance were carried out on the walkway improving its condition to 50% probability of failure, it would have an asset criticality score of 15.65 which would align with original expectations of being less critical than the spillway/embankment and inlet tower.

With overall consequence of failure scores of 31.29—47.20 out of 100 and asset criticality scores ranging between 21.91-23.60 out of 100 it can be reasoned that while the weir is moderately critical it is not highly critical, and its key components are in fair condition. This aligns with the fact that the weir is not the only water source for Goomeri and its failure can be tolerated. Overall the asset criticality scores aligned with expectations and appeared reasonable.

6.2.3 Jones Hill Water Treatment Plant

The results of the Asset Criticality Analysis for the Jones Hill Water Treatment Plant are presented in Figure 6-5 and Figure 6-6.

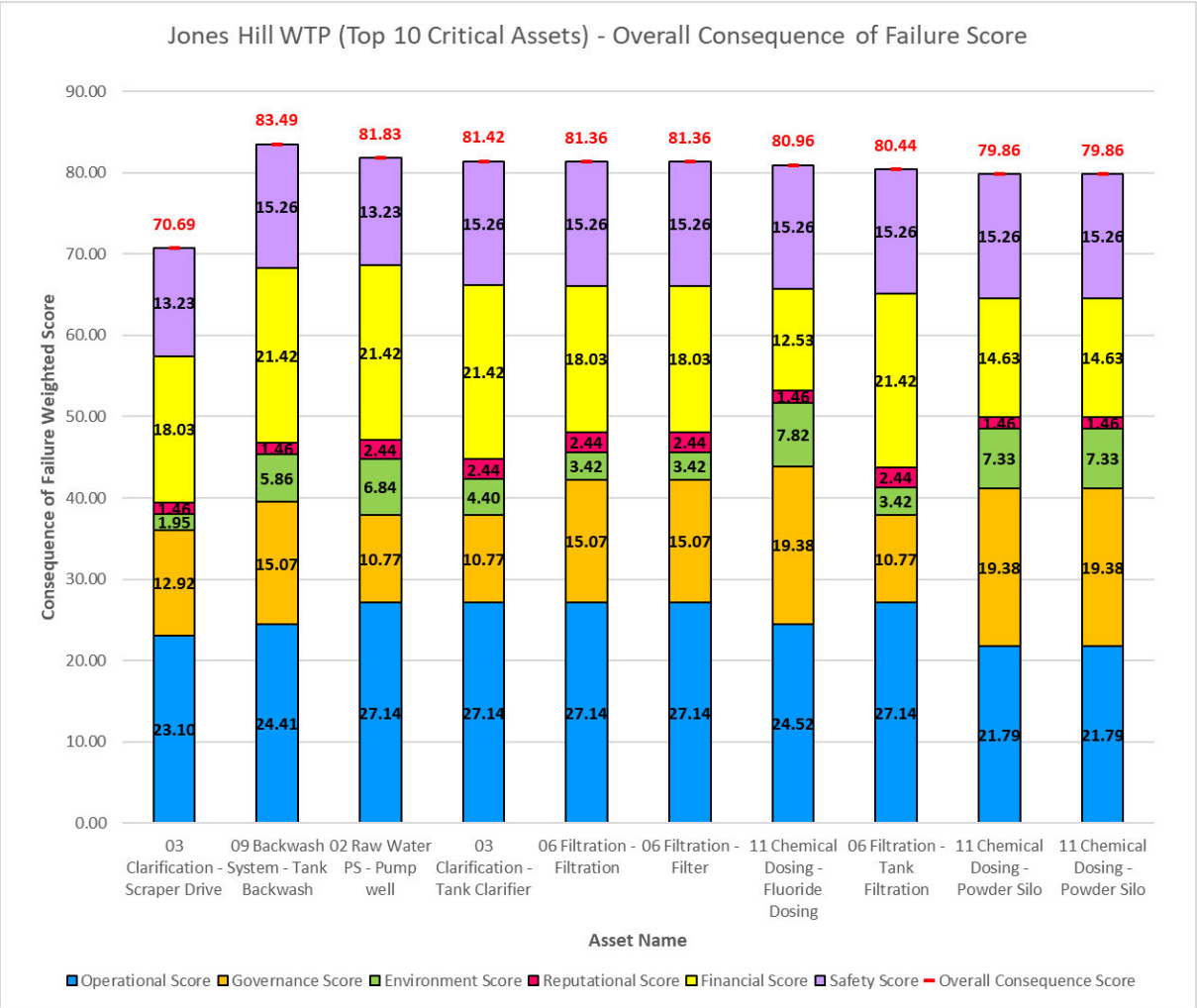


Figure 6-5: Jones Hill Water Treatment Plant – Overall Consequence of Failure Scores

Out of the 82 assets at the WTP, the top 10 assets in terms of overall asset criticality score were considered. In terms of consequence of failure only, the backwash tank is the most critical asset with a consequence score of 83.49, closely followed by the raw water pump well (81.83), clarification tank (81.42), filtration system (81.36), filtration media (81.36), fluoride dosing system (80.96), filtration tanks (80.44), and chemical storage silos (79.86). The lowest scoring asset was the scraper drive/system within the clarification tank with a score of 70.69 which is noticeably lower than the other top 10 assets. As expected with a water treatment plant, there are multiple expensive assets that are essential to producing water and without them production will cease.

The backwash tank is a large and expensive asset that is used to store dirty filtrate water for recovery and therefore has the potential to contaminate the environment and stop water production. It also has a significant safety risk from the potential for falling into the tank and/or drowning. Similarly, the clarification tank, filtration tank, filtration systems and filtration media are large and complex assets to repair or reconstruct. If any of these assets fail water production will cease. The fluoride dosing system ranks highly due to its potential for environmental contamination and for risks to health and safety due to overdosing. The chemical storage silos rank highly for the similar reasons. The clarifier scraper drive/system ranks slightly lower due to the fact that its failure can be tolerated for a short period of time, is less costly and has very little environmental contamination potential located at the bottom of the clarifier tank. It does however rank highly in difficulty of repair due to its location. Overall the consequence scoring aligned with expectations and appeared reasonable.

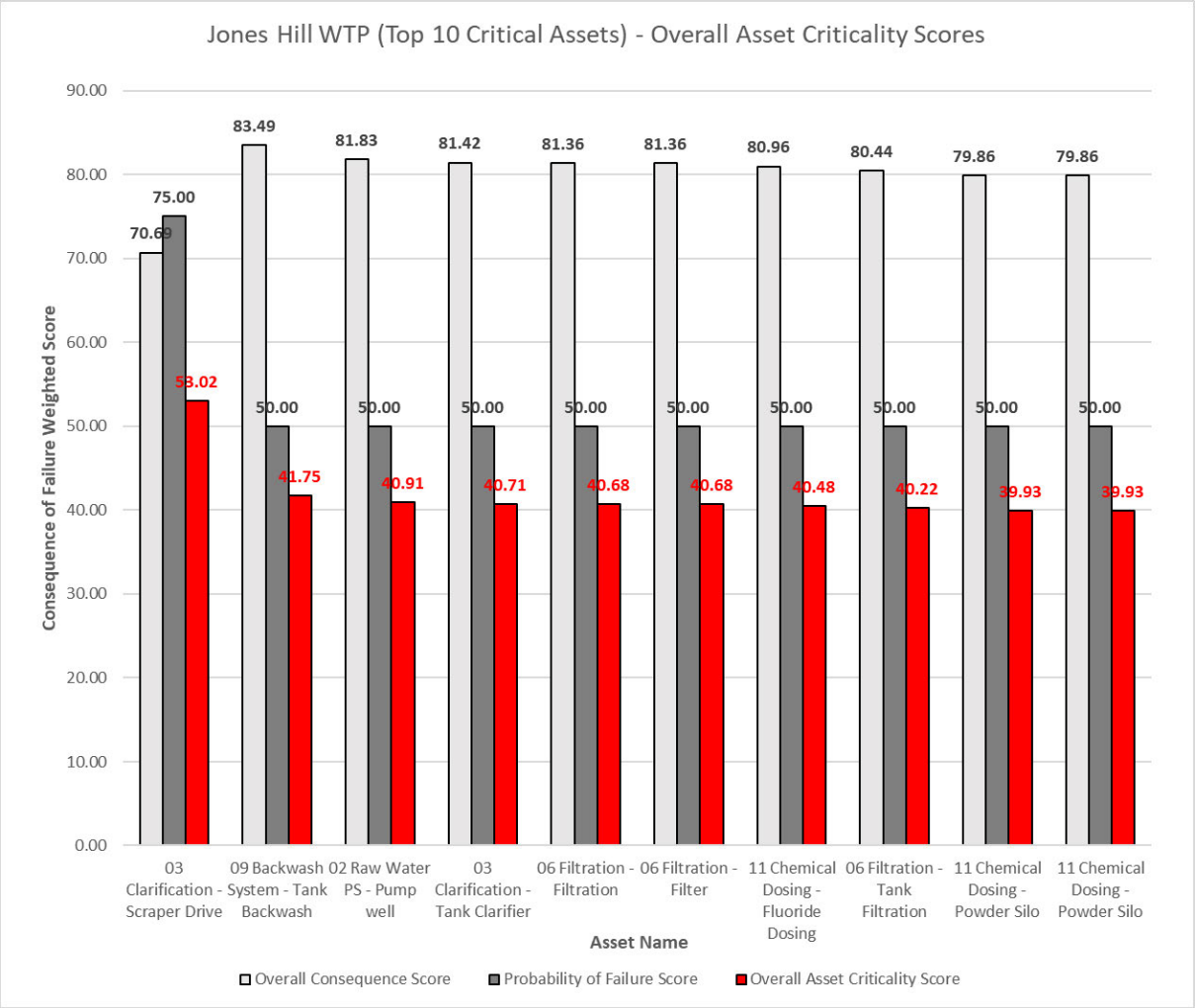


Figure 6-6: Jones Hill Water Treatment Plant – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, the criticality scoring is the same pattern across the assets due to the same probability of failure with the exception of the clarification scraper drive/system which has a probability of failure of 75% due to its condition. This scenario is a great example of when an asset with lower consequence is actually more critical than others due to the increased probability of the consequences occurring. The scoring has identified that the scraper drive requires maintenance/repair or replacement to reduce its probability of failure and has prioritised the asset at the top of the scoring until this occurs. Once the condition is improved the scraper drive will drop out of the top 10 and a new priority asset will become the part of the organisations focus.

With overall consequence of failure scores of 70.6—83.49 out of 100 and asset criticality scores ranging between 39.93-53.02 out of 100 it is clear that the water treatment plant assets are extremely critical, with most assets in fair condition. This aligns with the fact that the water treatment plant is the only supply for the city of Gympie and surrounding suburbs. Overall the asset criticality scores aligned with expectations and appeared reasonable.

6.2.4 Gympie Wineglass High-Level Reservoir

The results of the Asset Criticality Analysis for the Gympie Wineglass High-Level Reservoir are presented in Figure 6-7 and Figure 6-8.

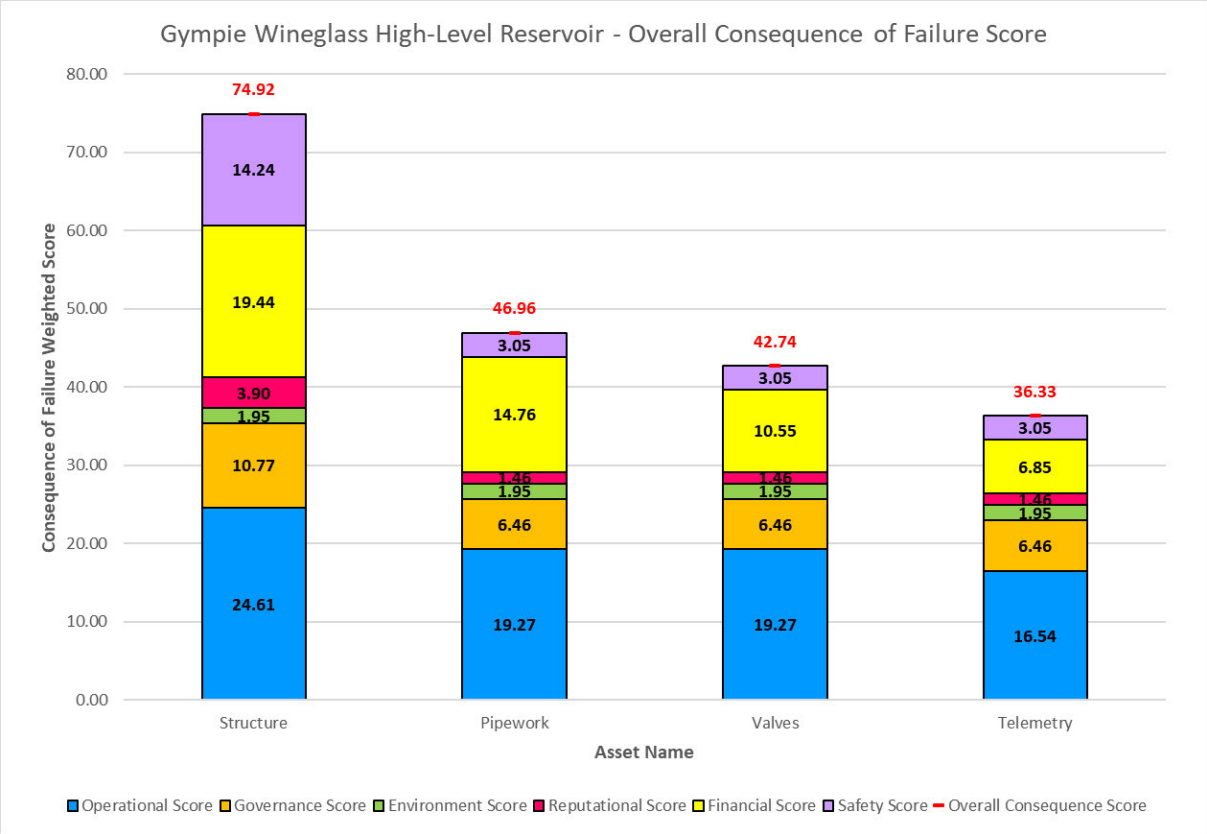


Figure 6-7: Gympie Wineglass High-Level Reservoir – Overall Consequence of Failure Scores

In terms of consequence of failure only, the reservoir structure is the most critical asset with a consequence score of 74.92. This appears to be appropriate as water pressure will be significantly reduced for a large number of customers if the reservoir structure fails and it is very complex, lengthy and costly to repair/replace. Interestingly the reservoir structure has a high reputation score due to its visibility of its failure to the public. Pipework is the next most critical asset with a score of 46.96 for similar reasons to the reservoir structure, however due to its relatively low cost and ease of repair its consequence of failure is somewhat lessened. Just below pipework is the reservoir valves with a score of 42.74. The reservoir valves scored equal with pipework other than their cost of repair/replacement which was relatively lower. The least critical asset was the telemetry system with a score of 36.33 as it was not critical for the reservoir to maintain water pressure (its primary function) but was important for compliance and efficient operations. Overall the consequence scoring aligned with expectations and appeared reasonable.

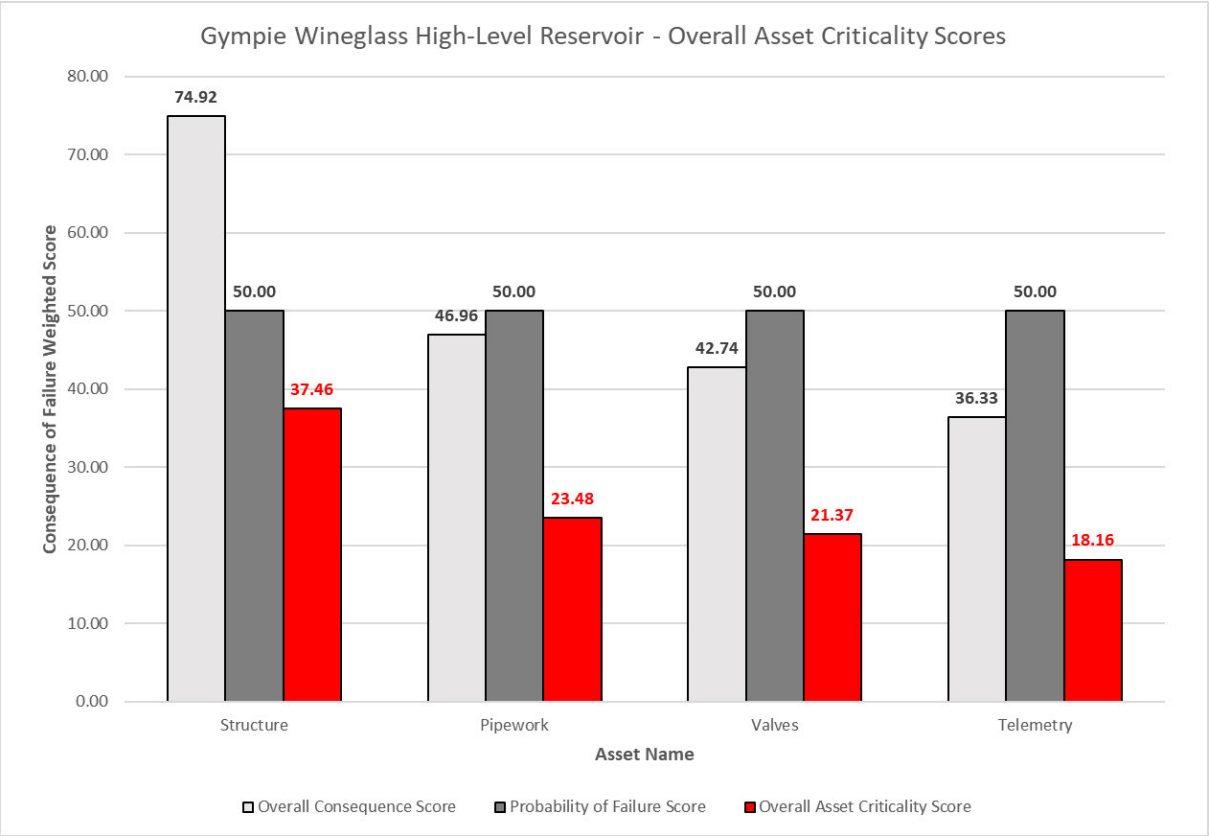


Figure 6-8: Gympie Wineglass High-Level Reservoir – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, the pattern is repeated with a probability of failure of 50% being applied to all four assets. With overall consequence of failure scores of 36.33—74.92 out of 100 and asset criticality scores ranging between 18.16-37.46 out of 100 it can be reasoned that reservoir structure is highly critical, the other assets are of moderate to low criticality and all assets are in fair condition. Overall the asset criticality scores aligned with expectations and appear reasonable.

6.2.5 Rainbow Beach Water Booster Pump Station

The results of the Asset Criticality Analysis for the Rainbow Beach Water Booster Pump Station are presented in Figure 6-9 and Figure 6-10.

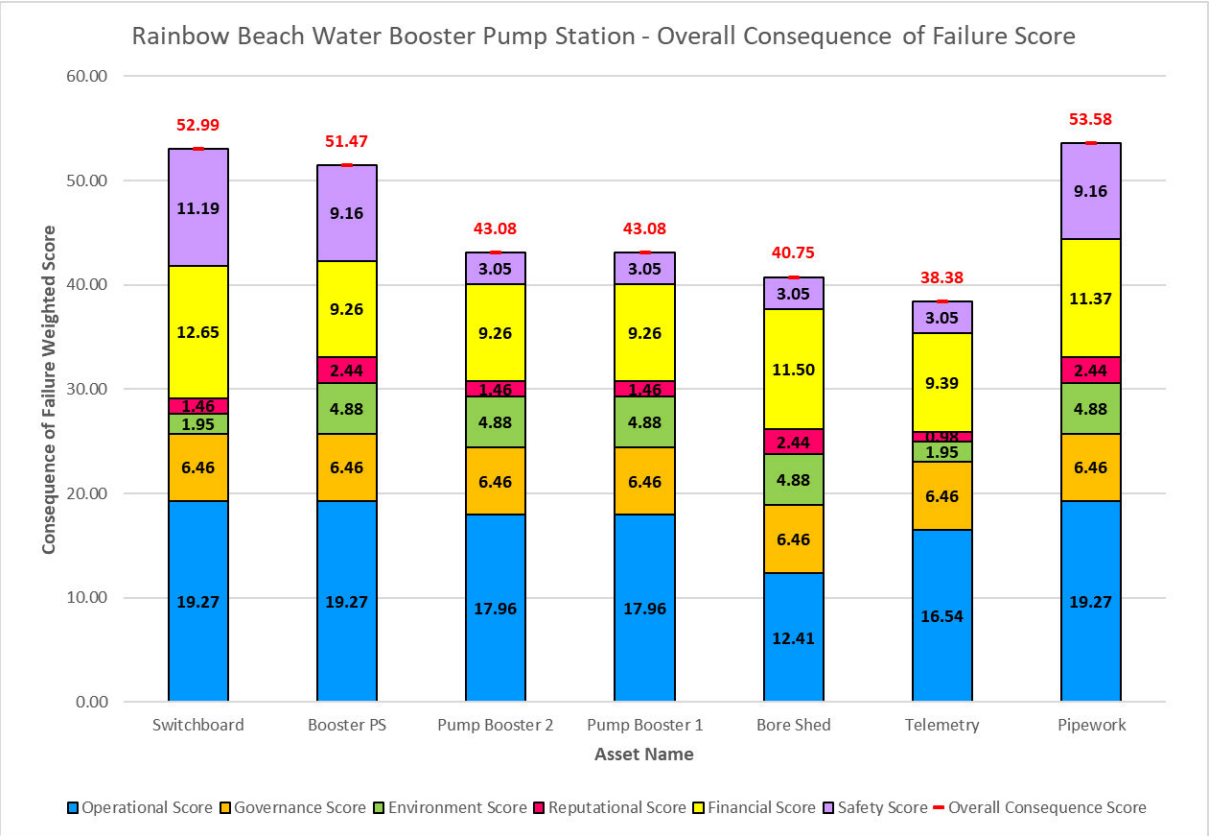


Figure 6-9: Rainbow Beach Water Booster Pump Station – Overall Consequence of Failure Scores

In terms of consequence of failure only, the pump station pipework is the most critical asset with a consequence score of 43.58, closely followed by the switchboard on 52.99. This appears to be appropriate as the treated water supply can't reach the distribution reservoir without the pipework, has the potential to contaminate the environment and its failure is visible to the public. Interestingly the pump station pipework scored higher than pipework for similar assets such as the bore and wineglass reservoir. Similar to pipework, no water can be pumped if the switchboard fails which can be expensive to repair or replace. The switchboard has a relatively high safety rating due to the potential for electrocution and arc flash resulting in death. The pump station is the next most critical asset with a score of 51.47 for similar reasons to the pipework and switchboard. Scoring lower than the pump station is the two booster pumps with an equal score of 43.08. Due to the duty/standby arrangement of the pumps there was a level of redundancy available which reduced potential operation consequences. Pumps are also relatively easy to source replacements for and maintain. The least critical assets were the pump station shed enclosure on 40.75 and the telemetry system with a score of 38.38. Both the shed and telemetry are not critical for the pump station to supply water (its primary function) but are important for avoiding asset exposure to harsh conditions, compliance and efficient operations. Overall the consequence scoring aligned with expectations and appeared reasonable.

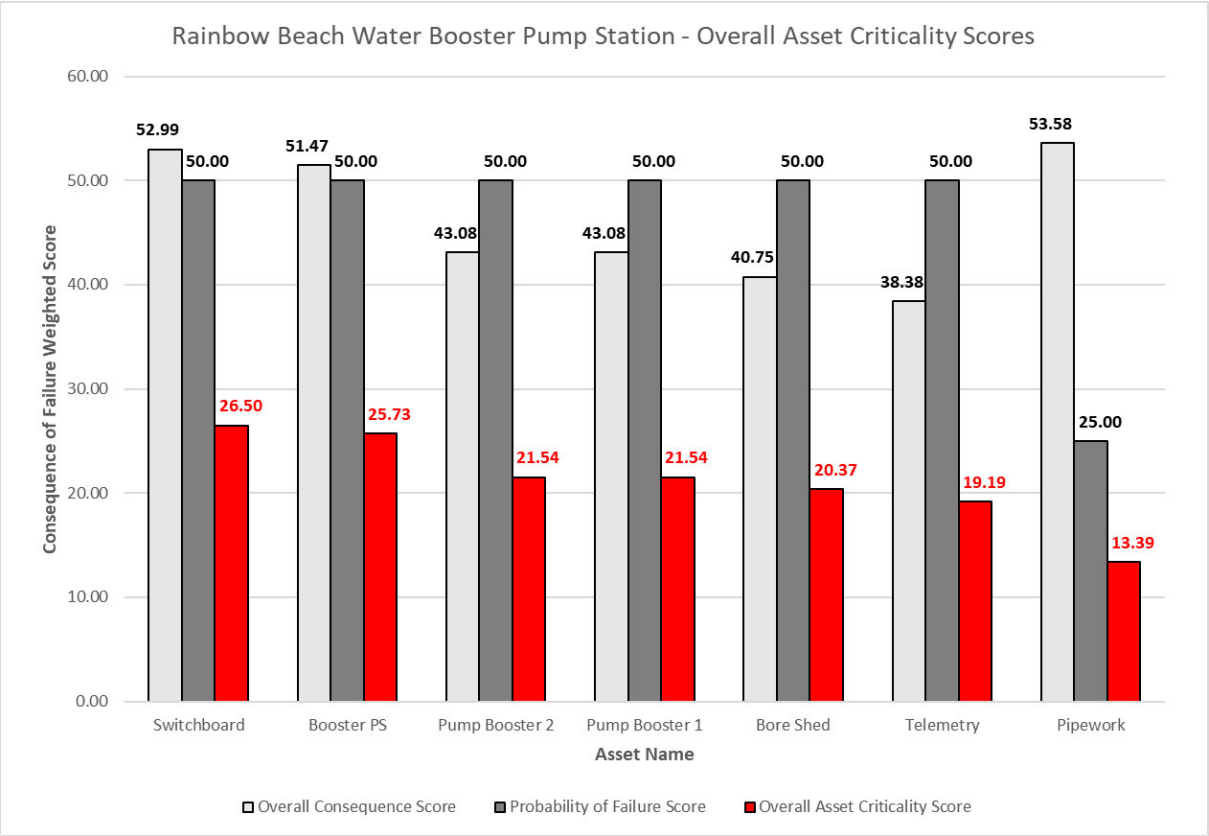


Figure 6-10: Rainbow Beach Water Booster Pump Station – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, the criticality scoring is the same pattern across the assets due to the same probability of failure with the exception of the pipework which has a lower probability of failure of 25% due to its good condition. This scenario is a great example of when an asset with greater consequence is less critical than others due to the reduced probability of the consequences occurring. If the condition of the pipework was to deteriorate increasing the probability of failure to 50%, it would be reprioritised as the most critical asset with a score of 26.78 and become part of the organisations focus.

With overall consequence of failure scores of 38.38—53.58 out of 100 and asset criticality scores ranging between 13.39-26.50 out of 100 the pump station assets can be considered moderately critical, with most assets in fair condition. Given that the pump station is required for water to be distributed to Rainbow Beach it appears that the criticality scoring is a bit low when compared to expectations. This is potentially due to the small number of EP serviced in Rainbow Beach where the highest score the scheme can achieve is a 3 out of 5 for EP effected and suggests that some additional refinement to the definitions may be required.

6.2.6 Rainbow Beach Water Mains

The results of the Asset Criticality Analysis for the Rainbow Beach Water Mains are presented in Figure 6-11 and Figure 6-12.

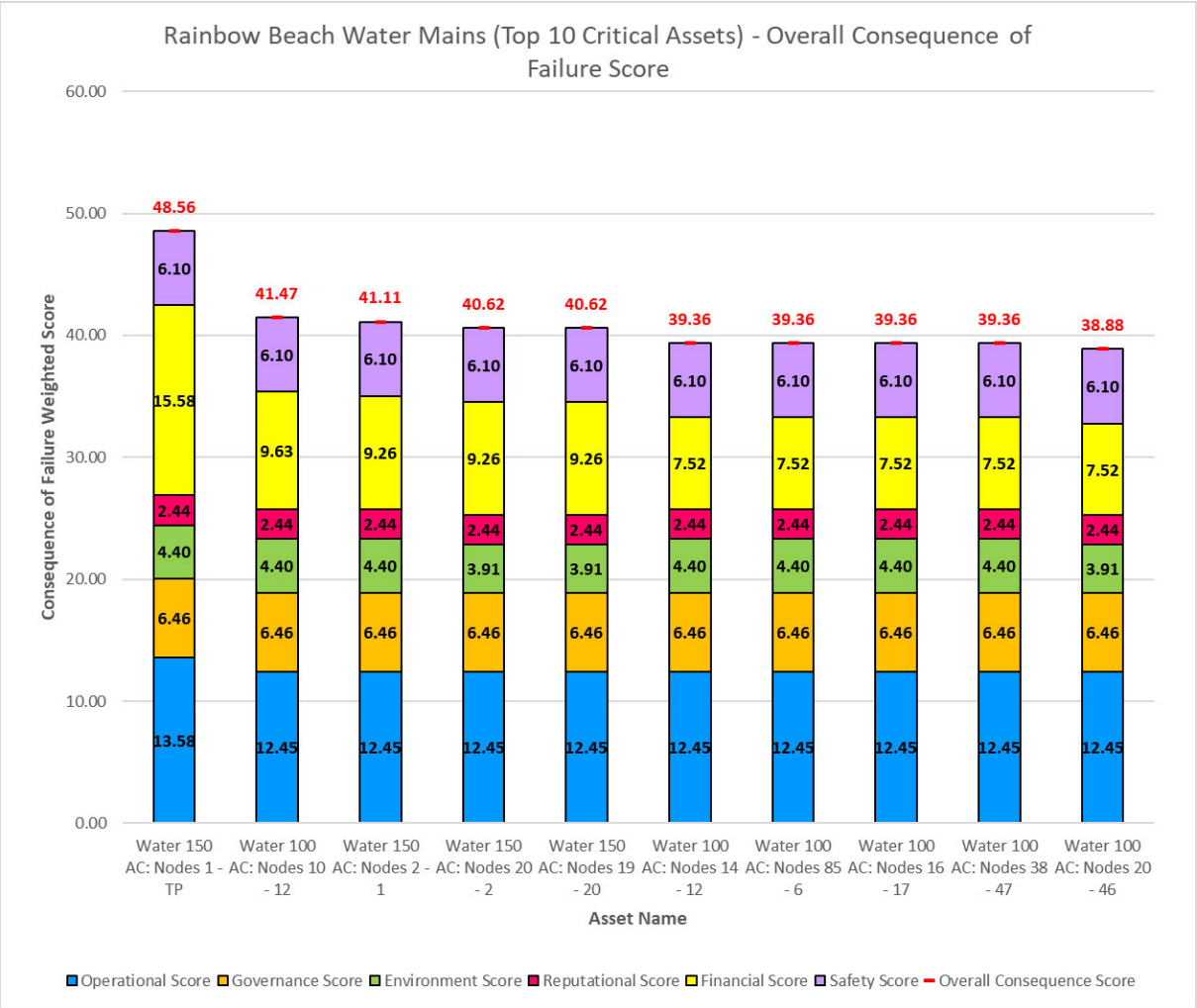


Figure 6-11: Rainbow Beach Water Mains – Overall Consequence of Failure Scores

Out of the 219 water pipe assets studied, the top 10 assets in terms of overall asset criticality score were considered. In terms of consequence of failure only, segments of pipe closest to the treatment plant were the most critical as their failure would prevent water distribution. Other than some minor differences in cost the consequence of failure scores were relatively close between 38.88-41.47 with the link from the treatment plant to node 1 the most critical and costly. Overall the results are generally too close for meaningful prioritisation and suggests that some additional refinement to the definitions may be required. Integration of water modelling data and a revision of the definitions may greatly improve the accuracy and validity of the data.

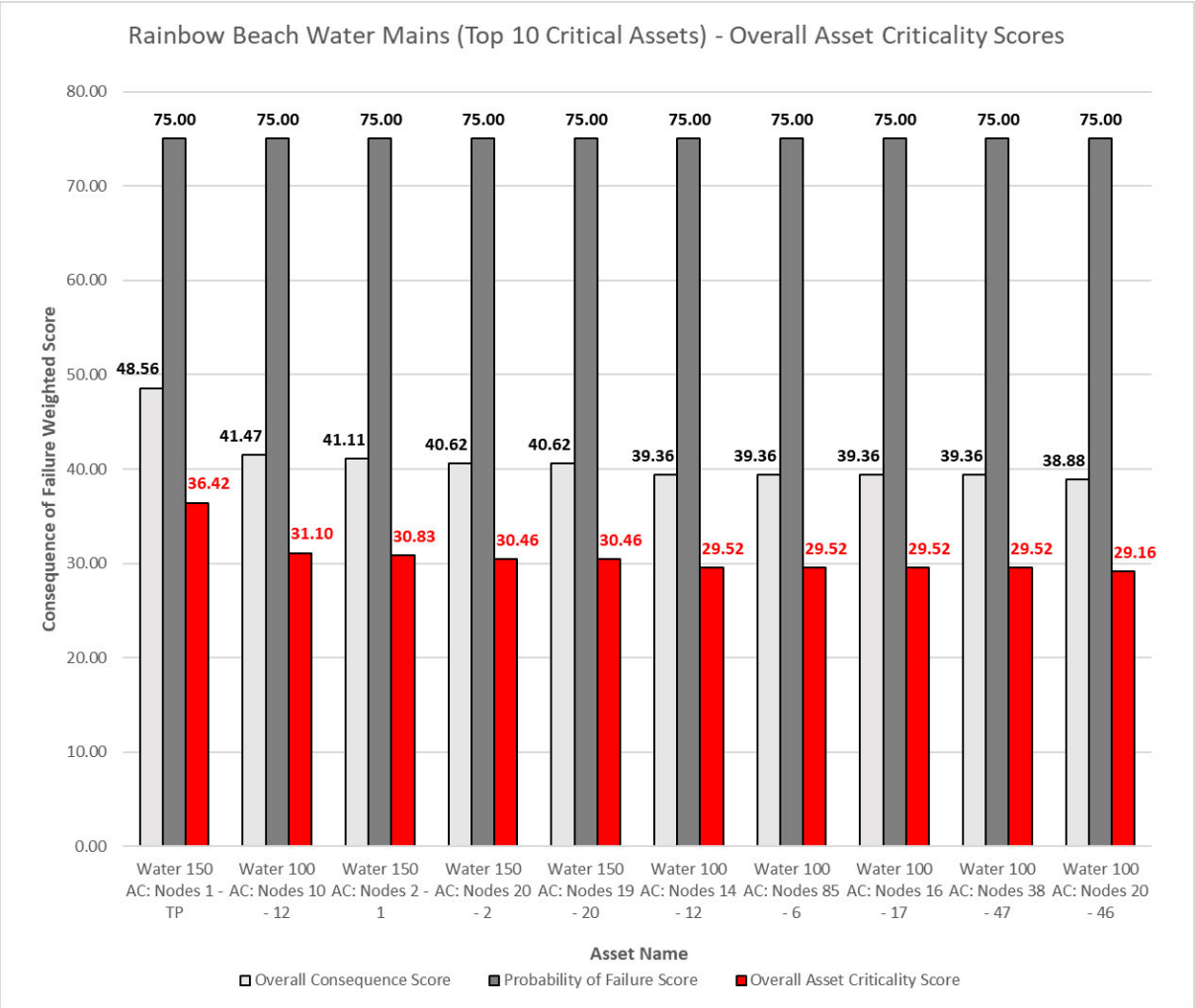


Figure 6-12: Rainbow Beach Water Mains – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, the pattern is repeated with a probability of failure of 75% being applied to all ten assets. The high probability of failure aligns with the aged asbestos cement (AC) pipes which highlights why newer and larger DN300 PVC pipes don't make the top 10. With overall consequence of failure scores of 38.88-48.56 out of 100 and asset criticality scores ranging between 29.16-36.42 out of 100 the top 10 pipe segments can be considered to be moderately critical, due to their poor condition. As discussed above, overall the results are generally too close for meaningful prioritisation and require amendments to the framework.

6.2.7 Rainbow Beach Water Nodes

The results of the Asset Criticality Analysis for the Rainbow Beach Water Nodes are presented in Figure 6-13 and Figure 6-14.

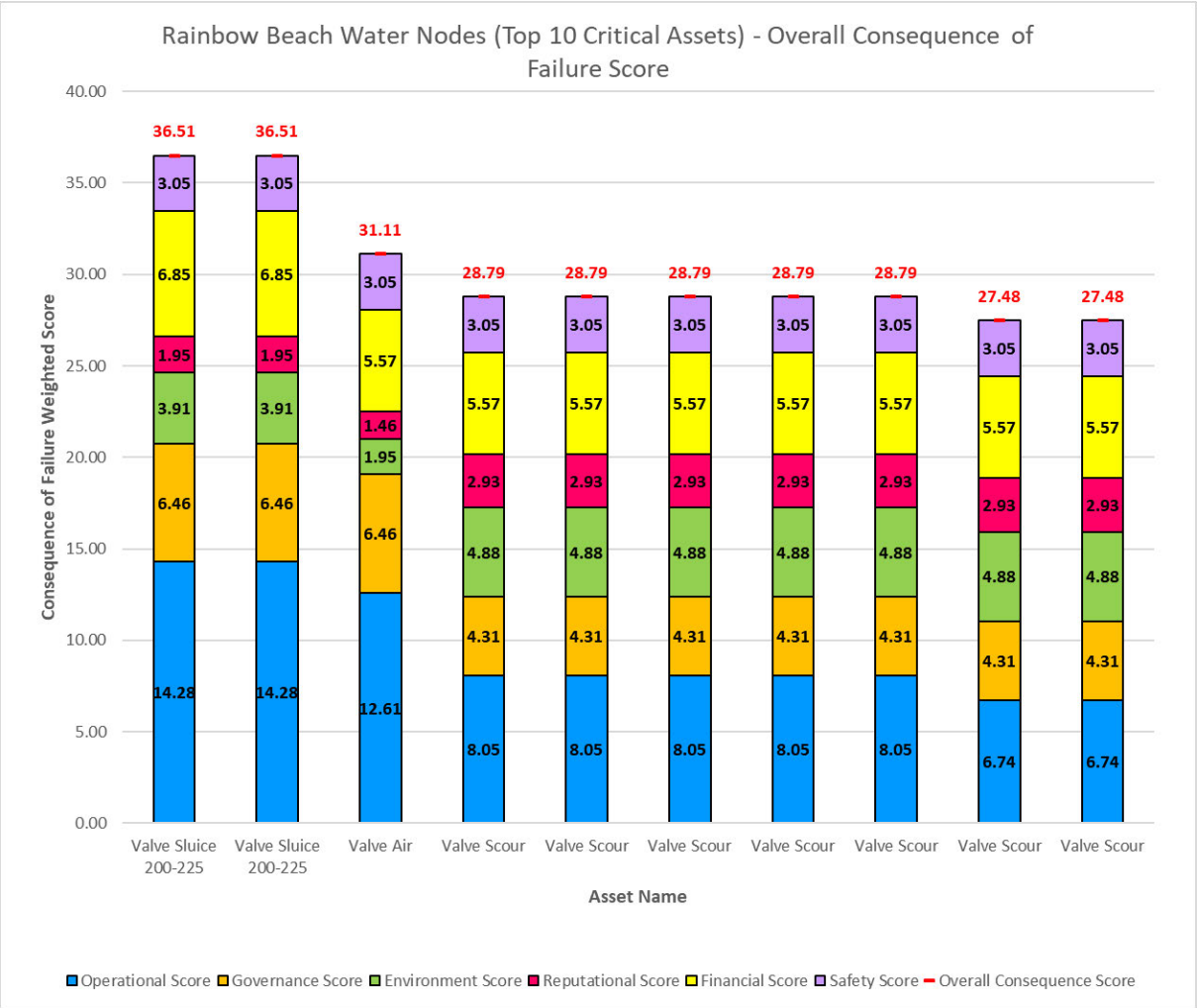


Figure 6-13: Rainbow Beach Water Nodes – Overall Consequence of Failure Scores

Out of the 339 water node assets studied, the top 10 assets in terms of overall asset criticality score were considered. In terms of consequence of failure only, the top 10 critical assets were large sluice valves and several air and scour valves. This is likely due to the higher costs when compared to some of the other water node asset types like hydrants and smaller sluice valves. Other than some minor differences in cost the consequence of failure scores were relatively close between 27.48-3.11 with the two large sluice valves the most critical and costly at 36.51. Overall the results are generally too close for meaningful prioritisation and suggests that some additional refinement to the definitions may be required. For example, failure of a valve may mean a section of network can't be isolated for a shutdown/repair, but water supply is still maintained which aligns with a low operational score. Integration of water modelling data and a revision of the definitions with this in mind may greatly improve the accuracy and validity of the data.

Interestingly hydrants generally scored very low in terms of criticality due to the fact that their failure is only an impact when fighting a fire and does not affect water supply. Providing enough fire hydrants and with sufficient flow is a regulatory requirement however it is difficult to incorporate this requirement into the definitions without separate consideration.

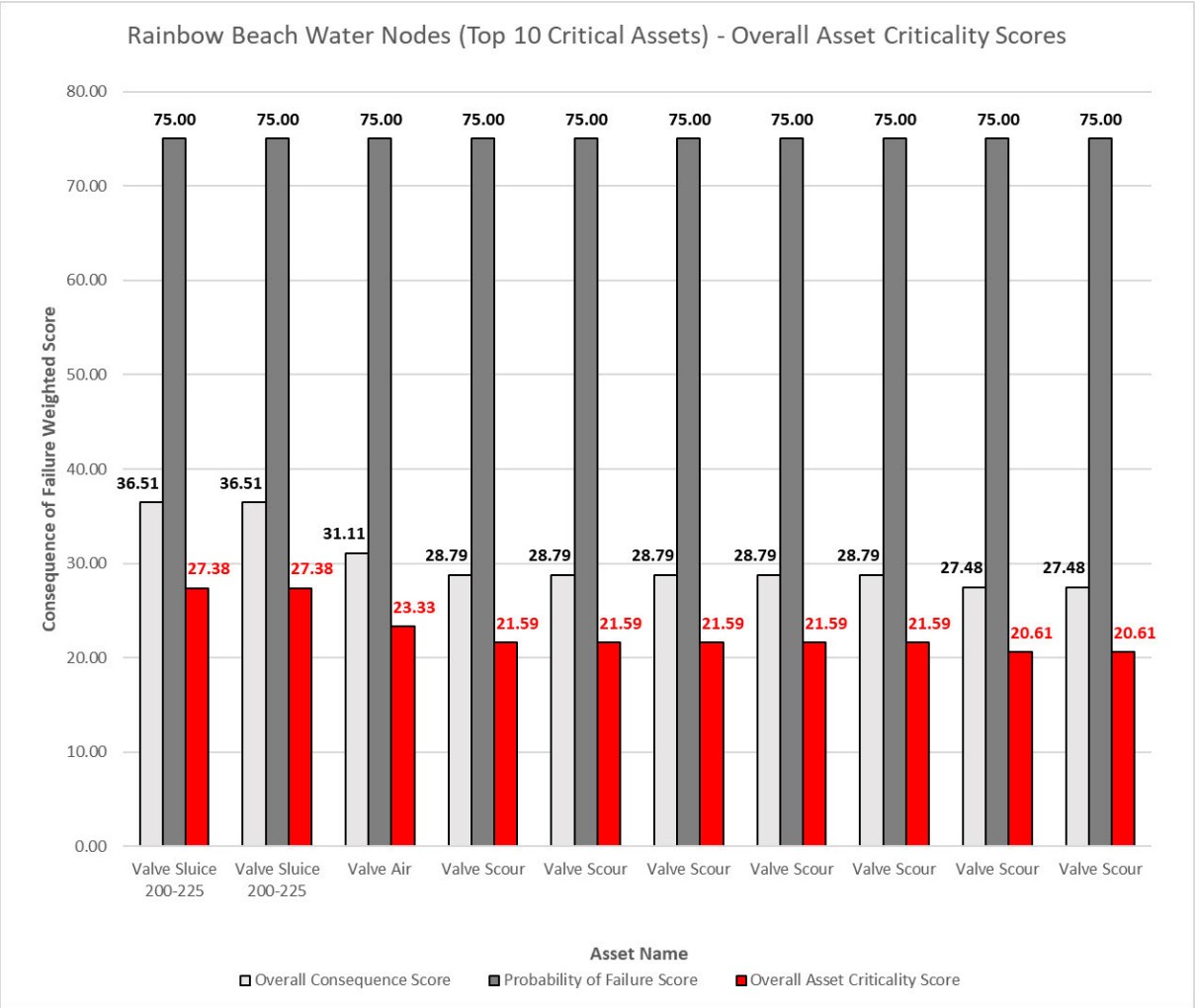


Figure 6-14: Rainbow Beach Water Nodes – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, the pattern is repeated with a probability of failure of 75% being applied to all ten assets. The high probability of failure aligns with the age of the valves which highlights why newer and larger DN300 valves don't make the top 10. With overall consequence of failure scores of 27.48-36.51 out of 100 and asset criticality scores ranging between 20.61-27.38 out of 100 the top 10 pipe segments can be considered to be moderately critical, due to their poor condition. As discussed above, overall the results are generally too close for meaningful prioritisation and suggests that some additional refinement to the definitions may be required.

6.2.8 Rainbow Beach Water Services & Meters

The results of the Asset Criticality Analysis for the Rainbow Beach Water Services & Meters are presented in Figure 6-15 and Figure 6-16.

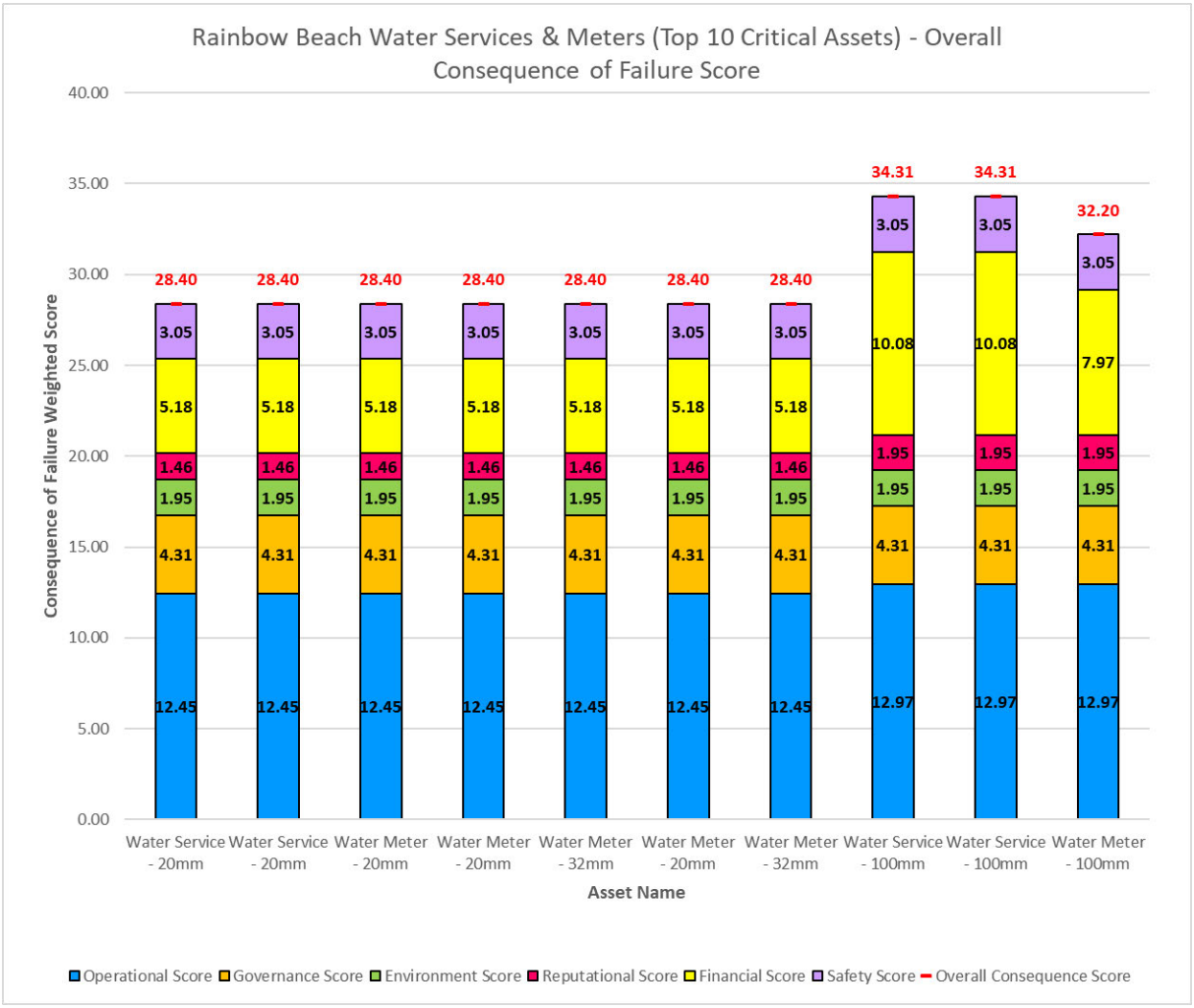


Figure 6-15: Rainbow Beach Water Services & Meters – Overall Consequence of Failure Scores

Out of the 2022 water service and water meter assets studied, the top 10 assets in terms of overall asset criticality score were considered. In terms of consequence of failure only, the top 10 critical assets were a 50/50 split of water services and water meters with sizes ranging between 20-100mm. The larger 100mm services had higher costs and more important customer types which gave them the highest consequence of failure score of 34.31. The 100mm water meter was slightly lower on 32.20 while the rest of the 20-32mm services were equal on 28.40. It was expected that the 32mm meters would be more critical than 20mm meters however it appears cost has been allocated equally in the asset data. Overall the results are generally too close for meaningful prioritisation and suggests that some additional refinement to the definitions may be required.

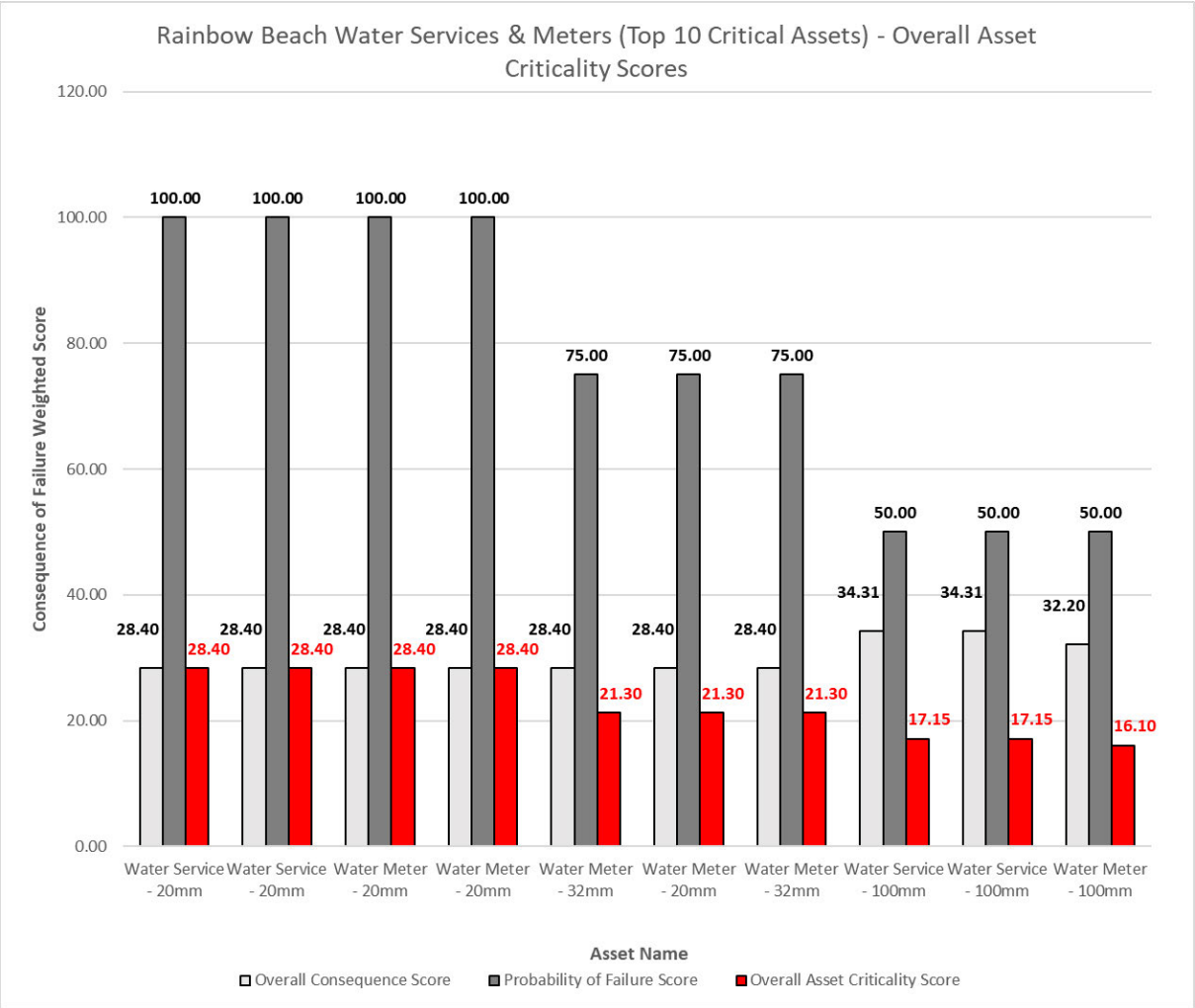


Figure 6-16: Rainbow Beach Water Services & Meters – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, there is a lot of variation with four assets having 100% probability of failure, three assets having 75% probability and three having 50% probability. The 100% probability of failure is based on an estimated condition score which means that the assets age is past its expected useful life. This suggests that the asset should be physically assessed to determine its actual condition and re-assessed for criticality. With overall consequence of failure scores of 28.40-34.31 out of 100 and asset criticality scores ranging between 16.10-28.40 out of 100 the top 10 water services and meters can be considered to be of low criticality, due to their impact on only one property/business. As discussed above, overall the results are generally too close for meaningful prioritisation and suggests that some additional refinement to the definitions may be required.

6.3 Sewerage Criticality Scoring

The Asset Criticality Analysis was performed on 2045 sewerage assets across each of the five asset categories with the full detailed results provided in Appendix C.

6.3.1 Gympie Sewerage Treatment Plant

The results of the Asset Criticality Analysis for the Gympie Sewerage Treatment Plant are presented in Figure 6-17 and Figure 6-18.

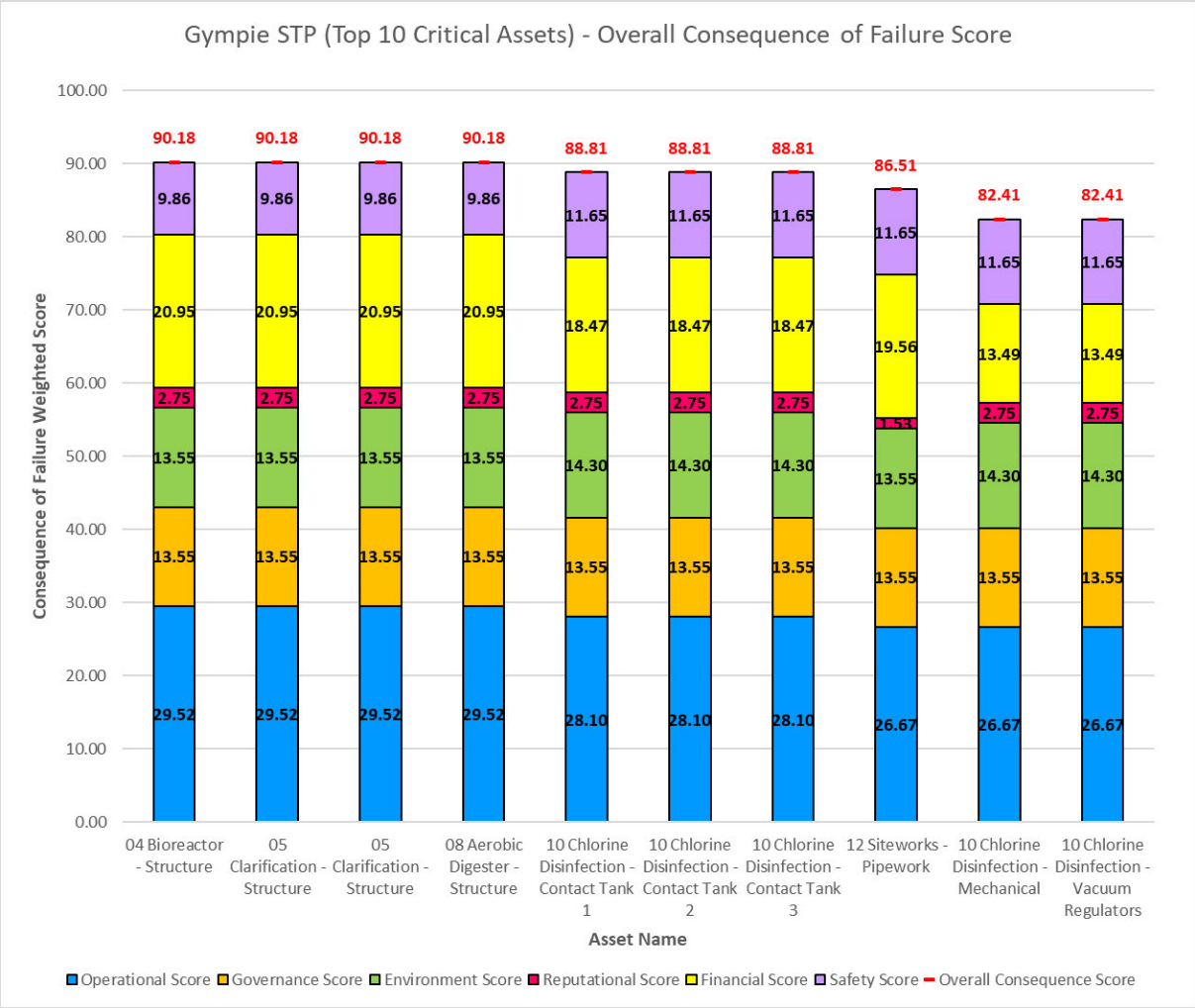


Figure 6-17: Gympie Sewerage Treatment Plant – Overall Consequence of Failure Scores

Out of the 144 assets at the STP, the top 10 assets in terms of overall asset criticality score were considered. In terms of consequence of failure only, the bioreactor tank, clarification tanks and aerobic digester tank are the most critical assets with an equal consequence score of 90.18. These assets are closely followed by the three chlorine contact tanks (88.81), site pipework (86.51) and chlorine disinfection systems (82.41). As expected with a sewerage treatment plant, there are multiple expensive assets that are essential to treating sewerage and without them treatment will cease and may result in compliance breeches and environmental contamination.

The bioreactor tank, clarification tank and aerobic digester tanks are large and expensive assets that are used to hold sewerage in different stages of treatment, has the potential to contaminate the environment and are essential for the treatment process. They also have a significant safety risk from the potential for falling into one of the tanks and/or drowning. Similarly the chlorine contact tanks and disinfection systems are essential for disinfection of the sewerage to meet regulatory compliance requirements for release. Without these systems environmental damage may occur from effluent released. Site pipework is required to transfer sewerage between treatment processes and any failure

will potentially result in environmental contamination and cease treatment processes. Overall the consequence scoring aligned with expectations and appeared reasonable.

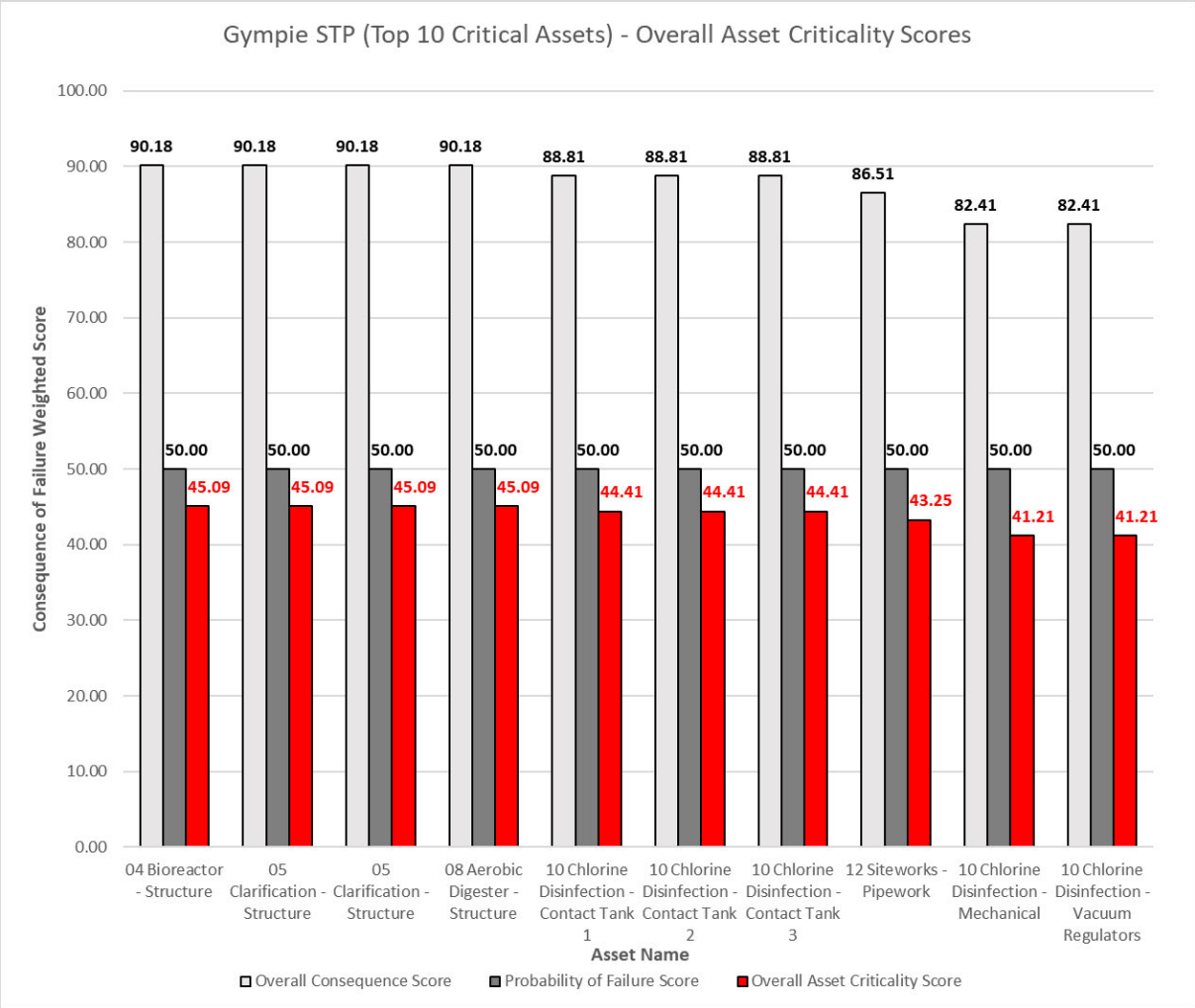


Figure 6-18: Gympie Sewerage Treatment Plant – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, the pattern is repeated with a probability of failure of 50% being applied to all ten assets. This is consistent with the treatment plant being upgraded in 2009 and the assets all similar age. With overall consequence of failure scores of 82.41-90.1 out of 100 and asset criticality scores ranging between 42.21-45.09 out of 100 it is clear that the sewerage treatment plant assets are extremely critical, with most assets in fair condition. This aligns with the fact that the sewerage treatment plant is the only sewerage treatment facility for the city of Gympie and surrounding suburbs. Overall the asset criticality scores aligned with expectations and appeared reasonable.

6.3.2 Gympie Sewerage Pump Station G1

The results of the Asset Criticality Analysis for the Gympie Sewerage Pump Station G1 are presented in Figure 6-19 and Figure 6-20.

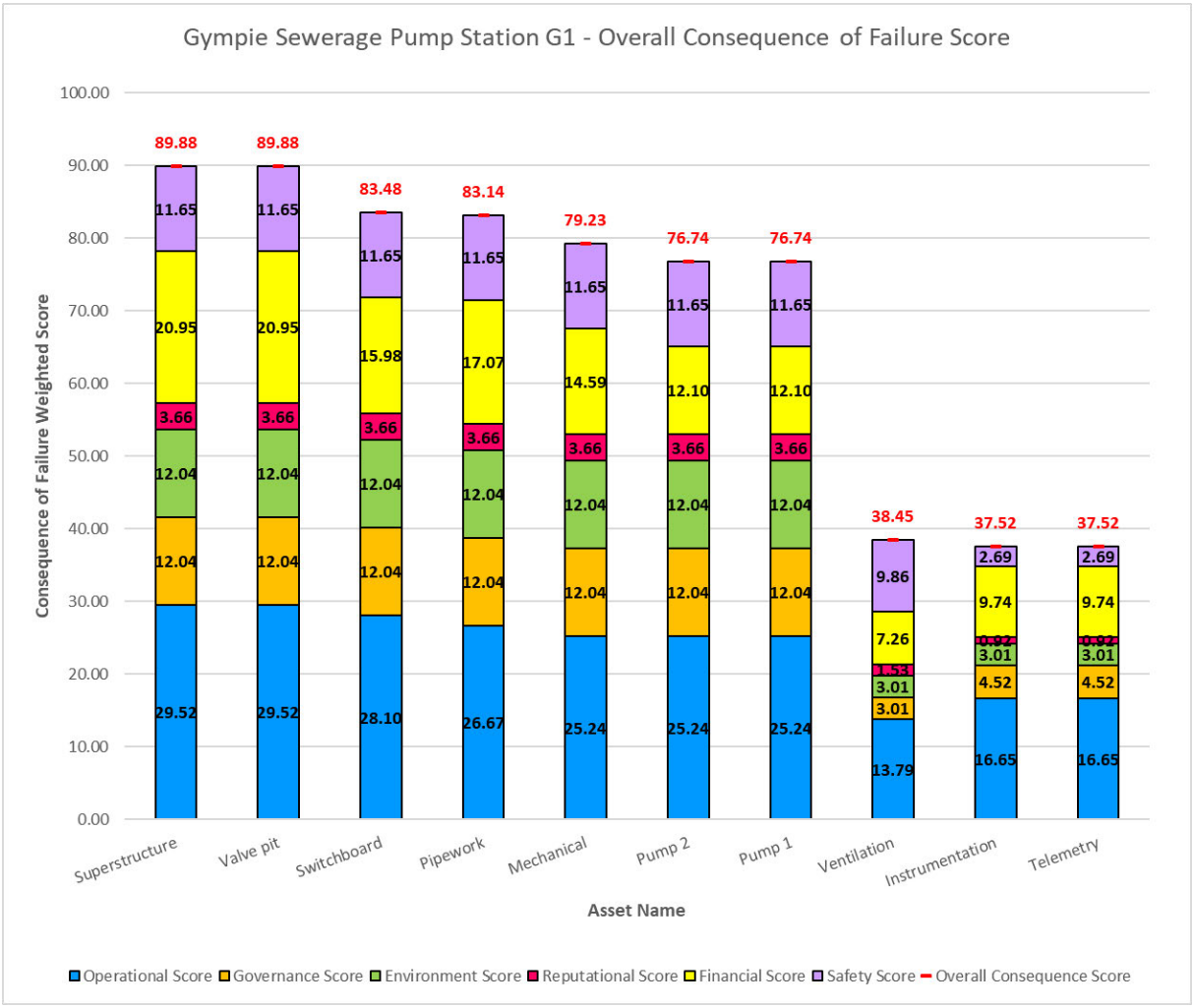


Figure 6-19: Gympie Sewerage Pump Station G1 – Overall Consequence of Failure Scores

In terms of consequence of failure only, the pump station well structure and above ground valve pit are the most critical assets with a consequence score of 89.88, closely followed by the switchboard (83.48), pipework (83.14), mechanical equipment (79.23) and sewerage pumps (76.74). The lowest scoring assets were the ventilation (38.45), instrumentation (37.52) and telemetry systems (37.52) which were noticeably lower than the other top 10 assets. As expected with a major sewerage pump station, there are several expensive assets that are essential to transferring raw sewerage without environmental contamination.

The pump station well structure extends several meters below ground making it difficult to repair or replace and costly to do so. Failure of the well will result in environmental contamination and prevent the sewerage from being transferred to the treatment plant. The valve pit structure extends above ground over the wet well and its failure has equivalent consequences to the well structure. Similarly, sewerage can't be transferred if the switchboard fails which can be expensive to repair or replace. The switchboard has a relatively high safety rating due to the potential for electrocution and arc flash resulting in death. Pipework is the next most critical asset, however due to its relatively low cost and ease of repair its consequence of failure is somewhat lessened. The mechanical equipment and pumps are comparable with pipework in that they are required to transfer sewerage but have a level of redundancy (duty/standby pumps) and are relatively easy to source replacements for. All of these assets have a relatively high reputation score due to its visibility to the public and upsetting nature (i.e leaking raw sewerage). The ventilation system is required to allow personnel to enter the confined

space valve pit and does not contribute to the primary function of the pump station. The instrumentation and telemetry systems are also non-critical with respect to the primary function however are important for maintaining regulatory compliance and for efficient operations. Overall the consequence scoring aligned with expectations and appeared reasonable.

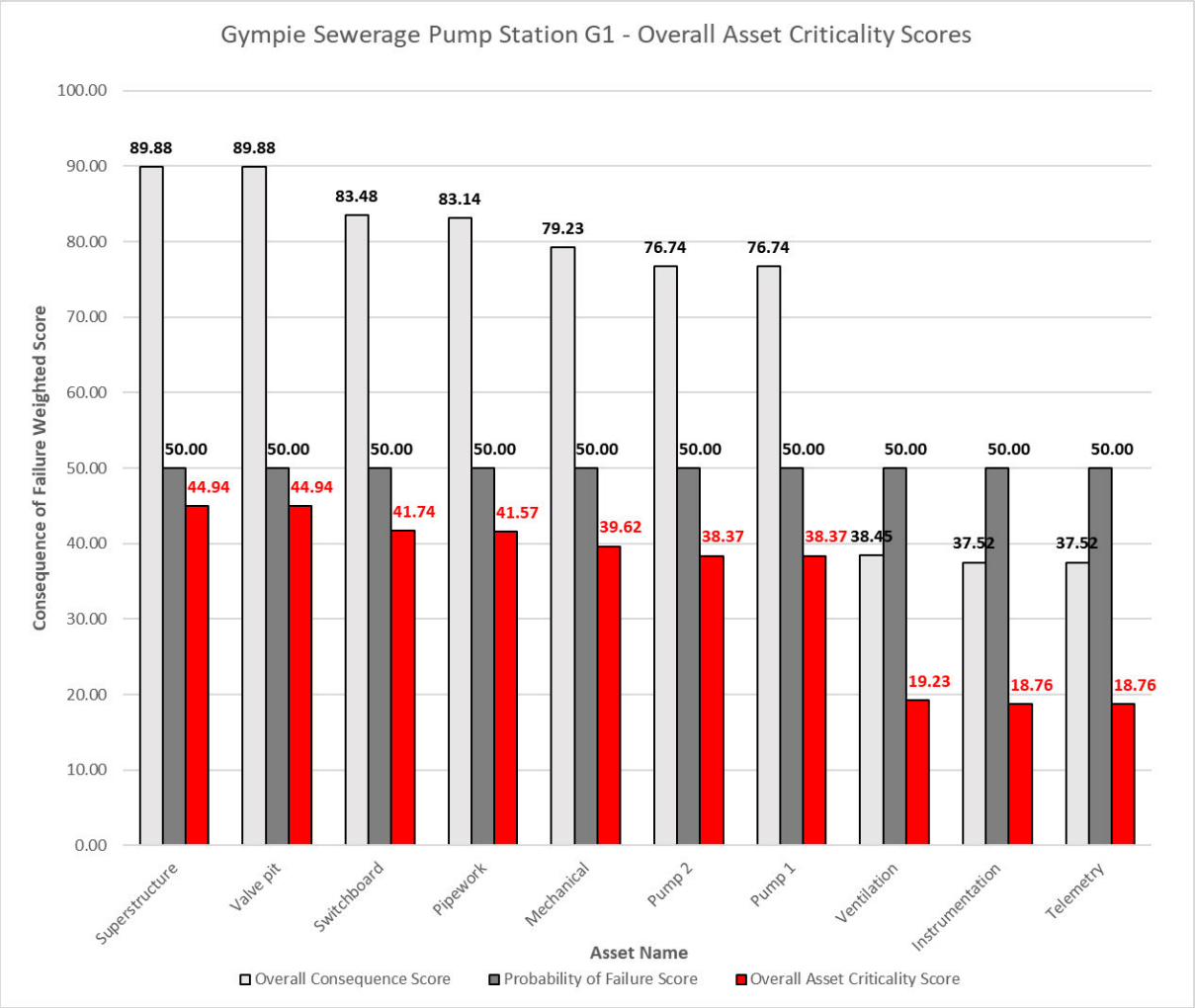


Figure 6-20: Gympie Sewerage Pump Station G1 – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, the pattern is repeated with a probability of failure of 50% being applied to all ten assets. This aligns with the aging pump station having been upgraded in recent years to maintain a fair condition. With overall consequence of failure scores of 37.52-89.88 out of 100 and asset criticality scores ranging between 18.76-44.94 out of 100 most of the pump station assets are highly critical, with a few low criticality assets. Overall the asset criticality scores aligned with expectations and appeared reasonable.

6.3.3 Rainbow Beach Sewerage Mains

The results of the Asset Criticality Analysis for the Rainbow Beach Sewerage Mains are presented in Figure 6-21 and Figure 6-22.

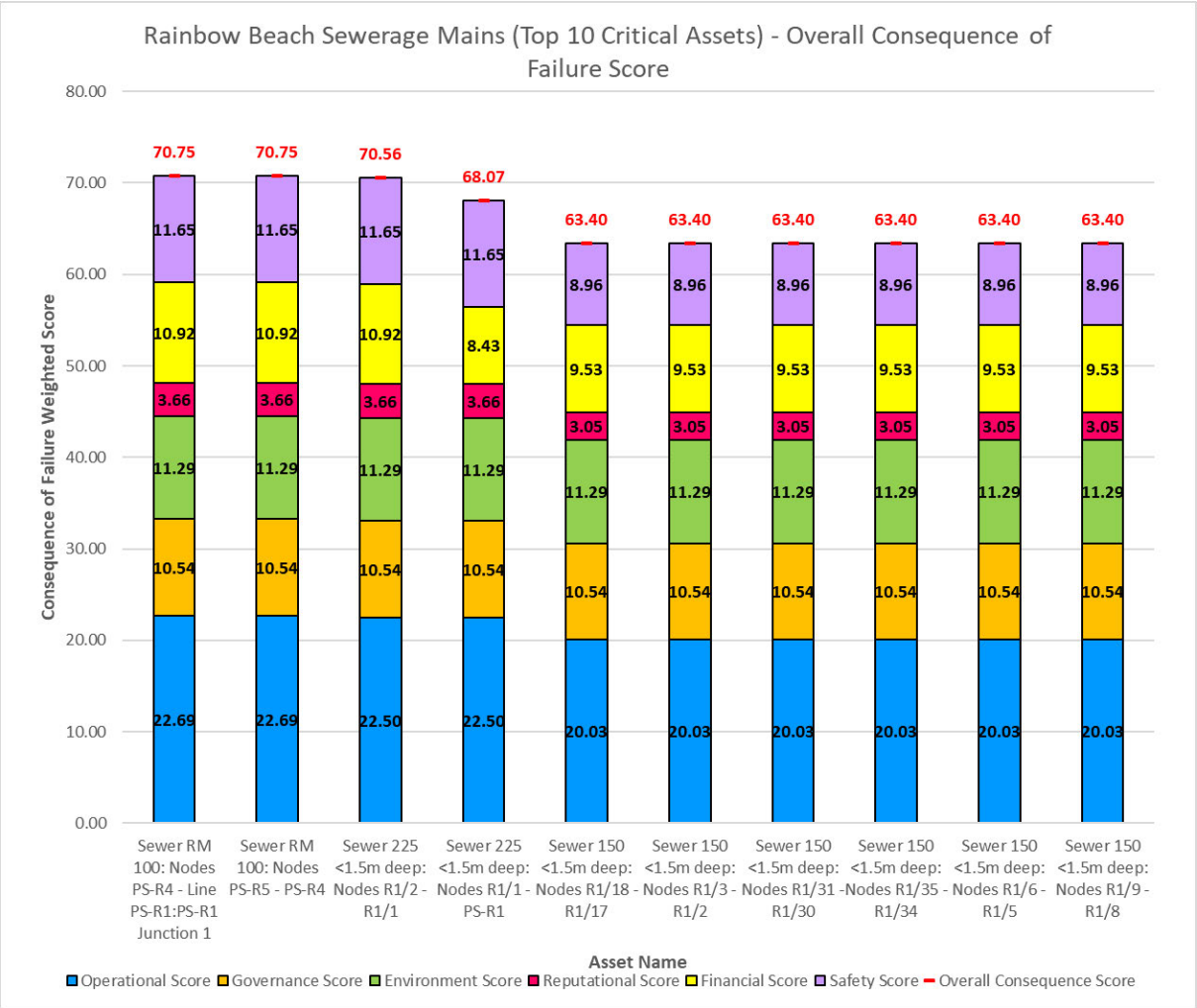


Figure 6-21: Rainbow Beach Sewerage Mains – Overall Consequence of Failure Scores

Out of the 453 sewerage pipe assets studied, the top 10 assets in terms of overall asset criticality score were considered. In terms of consequence of failure only, rising mains and segments of larger trunk main closest to the treatment plant were the most critical as their failure would prevent sewerage transfer. The rising mains and DN 225 trunk mains scored closely between 68.07-70.56 while the smaller DN150 trunk mains were equal on the lower score of 63.40. Overall the results are generally too close for meaningful prioritisation and suggests that some additional refinement to the definitions may be required. Integration of sewerage modelling data and a revision of the definitions may greatly improve the accuracy and validity of the data.

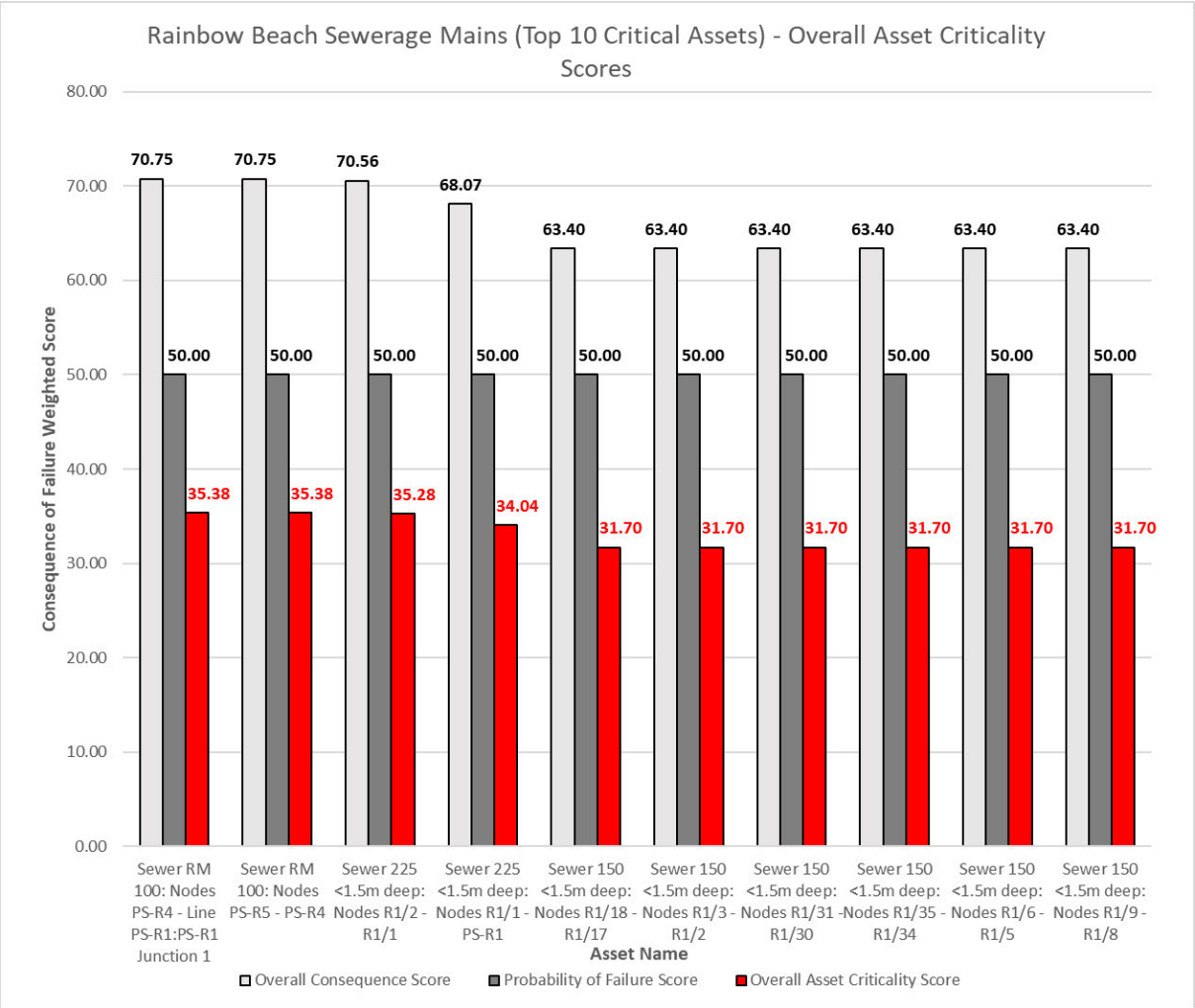


Figure 6-22: Rainbow Beach Sewerage Mains – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, the pattern is repeated with a probability of failure of 50% being applied to all ten assets. With overall consequence of failure scores of 63.40-70.75 out of 100 and asset criticality scores ranging between 31.70-35.38 out of 100 the top 10 pipe segments can be considered to be moderately to highly critical, due to their fair condition. As discussed above, overall the results are generally too close for meaningful prioritisation and require amendments to the framework.

6.3.4 Rainbow Beach Sewerage Nodes

The results of the Asset Criticality Analysis for the Rainbow Beach Sewerage Nodes are presented in Figure 6-23 and Figure 6-24.

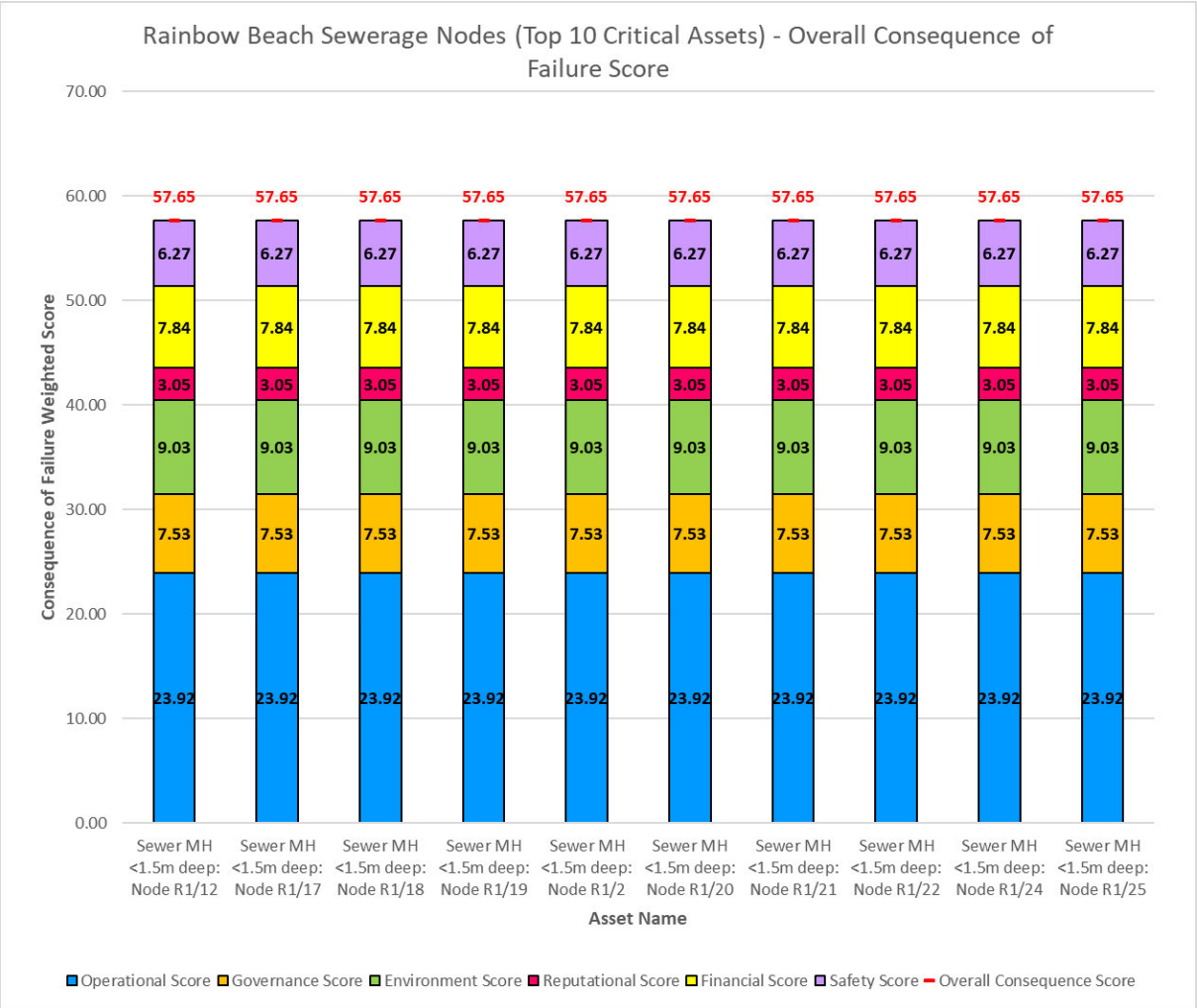


Figure 6-23: Rainbow Beach Sewerage Nodes – Overall Consequence of Failure Scores

Out of the 427 sewerage node assets studied, the top 10 assets in terms of overall asset criticality score were considered. In terms of consequence of failure only, the top 10 critical assets were all manholes located on trunk main lines with the same consequence score of 57.65. Overall the results are generally too close for meaningful prioritisation and suggests that some additional refinement to the definitions may be required. Integration of sewerage modelling data and a revision of the definitions may greatly improve the accuracy and validity of the data.

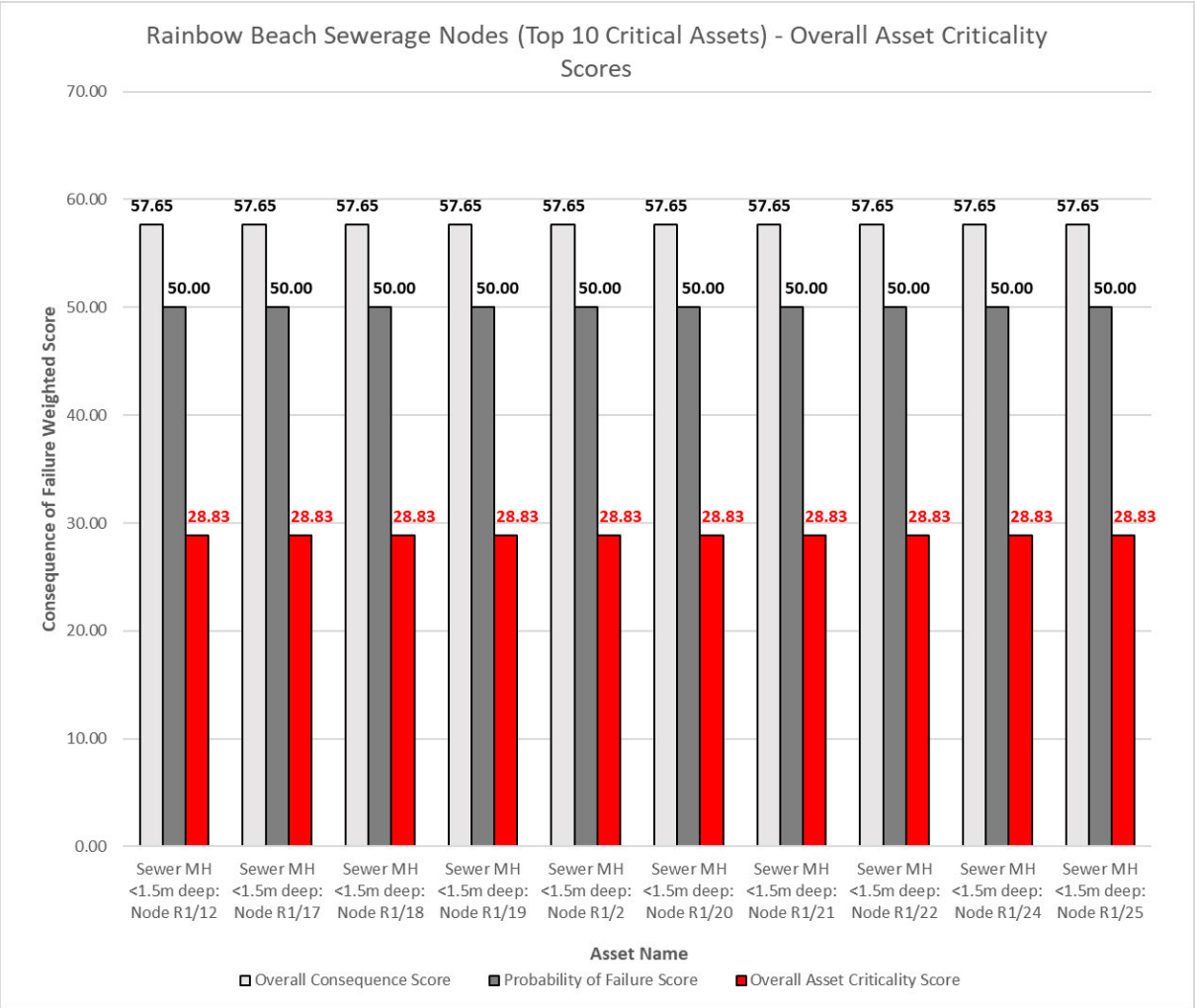


Figure 6-24: Rainbow Beach Sewerage Nodes – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, the pattern is repeated with a probability of failure of 50% being applied to all ten assets. With an overall consequence of failure score of 57.65 out of 100 and asset criticality score of 28.83 out of 100 the top 10 sewerage nodes can be considered to be moderately critical, due to their fair condition. As discussed above, overall the results are generally too close for meaningful prioritisation and suggests that some additional refinement to the definitions may be required.

6.3.5 Rainbow Beach Sewerage Services

The results of the Asset Criticality Analysis for the Rainbow Beach Sewerage Services are presented in Figure 6-25 and Figure 6-26.

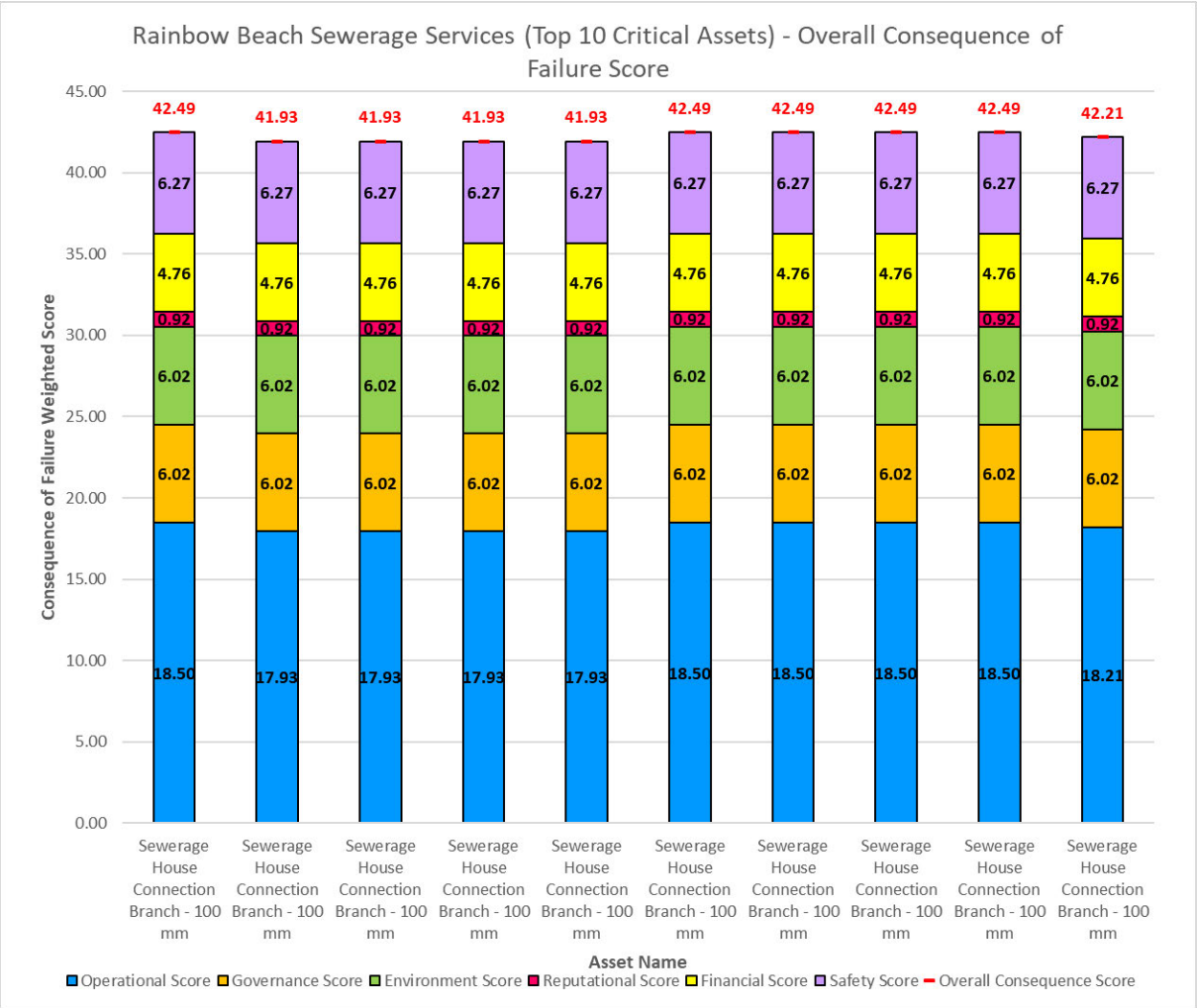


Figure 6-25: Rainbow Beach Sewerage Services – Overall Consequence of Failure Scores

Out of the 1011 sewerage service assets studied, the top 10 assets in terms of overall asset criticality score were considered. In terms of consequence of failure only, the top 10 critical assets were all standard 100mm house connection branches with scores between 41.3-42.49 depending on the customer serviced. Overall the results are generally too close for meaningful prioritisation and suggests that some additional refinement to the definitions may be required.

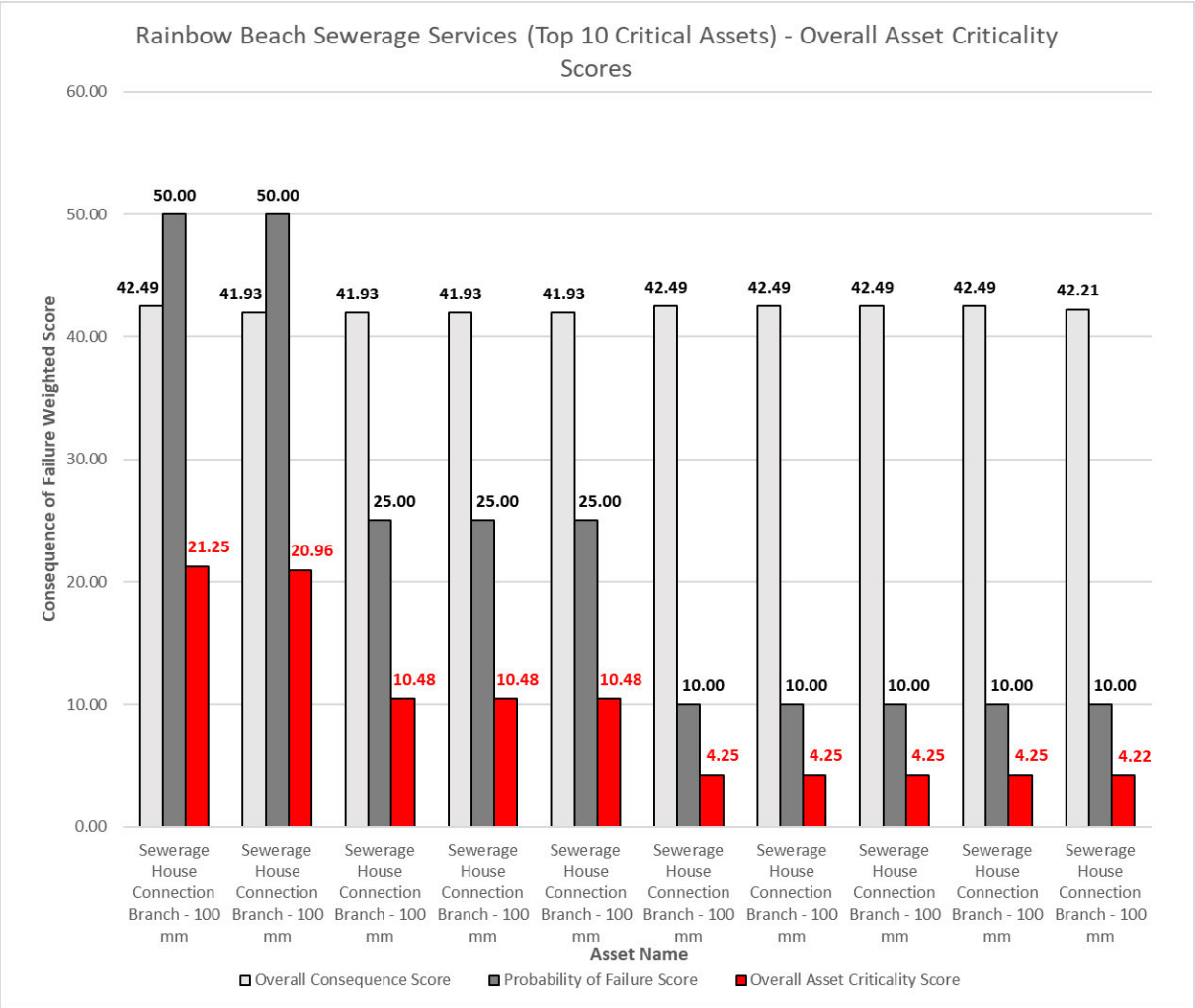


Figure 6-26: Rainbow Beach Sewerage Services – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, there is a lot of variation with two assets having 50% probability of failure, three assets having 25% probability and three having 10% probability. The 10% probability of failure appears to be an asset data anomaly. This suggests that the assets should be physically assessed to determine their actual condition and re-assessed for criticality. With overall consequence of failure scores of 41.93-42.49 out of 100 and asset criticality scores ranging between 4.22-21.25 out of 100 the top 10 sewerage services can be considered to be of low criticality, due to their impact on only one property/business. As discussed above, overall the results are generally too close for meaningful prioritisation and suggests that some additional refinement to the definitions may be required.

6.4 Average Overall Criticality Scoring Summary

In addition to the detailed assessment of the top ten assets, the Average Overall Criticality Score was determined for each of the asset categories as detailed in Table 6-1 to provide an indication of where each category comparatively placed against the others.

Table 6-1: Average Overall Criticality Score of Each Asset Category

Asset Class	Asset Category	Average Overall Criticality Score
Water	Water Treatment Plants	26.79
Water	Water Reservoir	25.12
Water	Water Booster Pump Station	21.18
Water	Raw Water Bore	20.90
Water	Water Mains	14.37
Water	Water Nodes – Valve	13.15
Water	Water Nodes – Hydrants	10.08
Water	Water Services & Meters	2.94
Sewerage	Sewerage Treatment Plant	27.07
Sewerage	Sewerage Pump Station	34.63
Sewerage	Sewerage Mains	15.23
Sewerage	Sewerage Nodes	10.73
Sewerage	Sewerage Services	4.25

The scoring generally aligned with expectations of the larger more expensive active assets scoring highest, followed in order by mains, nodes and services for each asset class. The main point of interest was that on average sewerage pump station components scored the highest of all asset categories, even exceeding the water and sewerage treatment plants. This suggests that a particular focus should be made of these assets to check severity scoring, verify condition data and take action to minimise risks to the organisation.

6.5 Overall Criticality Scoring Summary

The combined results of the Asset Criticality Analysis for all water and sewerage assets are summarised in Table 6-2 with the top 10 critical assets presented in Figure 6-27 and Figure 6-28.

Table 6-2: Distribution of All Water & Sewerage Assets Combined Results

Criticality Rating	Overall Criticality Score	Number of Water Assets	Number of Sewerage Assets
Low Criticality	0-20	2498	1711
Moderately Low Criticality	20-30	137	213
Moderate Criticality	30-40	38	103
High Criticality	40-50	7	18
Extreme Criticality	50-100	1	0

Within the total 4726 assets considered, 4209 assets were considered to have “Low Criticality”, 350 considered of “Moderately Low Criticality”, 141 considered of “Moderate Criticality”, 25 considered of “High Criticality” and 1 considered as of “Extreme Criticality”. For the higher criticality assets, the results indicated that the framework was successful in producing scores that allowed clear

prioritisation. However, many lower criticality assets that were very similar had equal scores which meant they could not be individually prioritised. This indicated that amendments to the framework are required to improve the granularity of scoring.

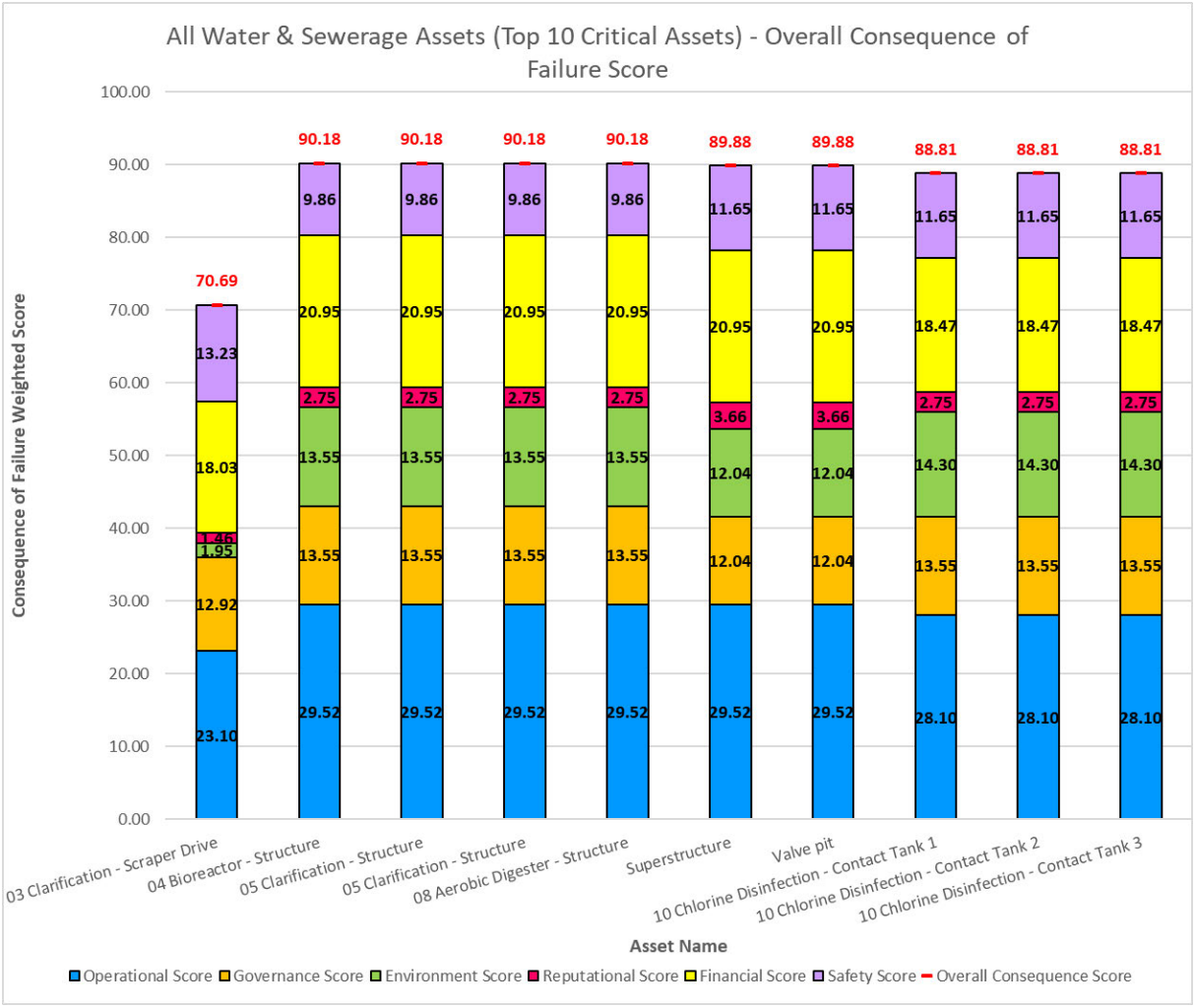


Figure 6-27: All Water & Sewerage Assets Combined Results – Overall Consequence of Failure Scores

The combined water and sewerage top 10 assets in terms of overall asset criticality were dominated by active sewerage assets with seven from the sewerage treatment plant and two from the sewerage pump station. The scoring ranged between 88.81-90.18 in terms of consequence of failure only while the water treatment plant scraper scored much lower of 70.69. It is noted that the scoring of several items is equivalent which means that unique prioritisation isn't achievable. It is envisioned that as the high-level assets are broken down into smaller components and asset condition assessment revised that this will improve the granularity.

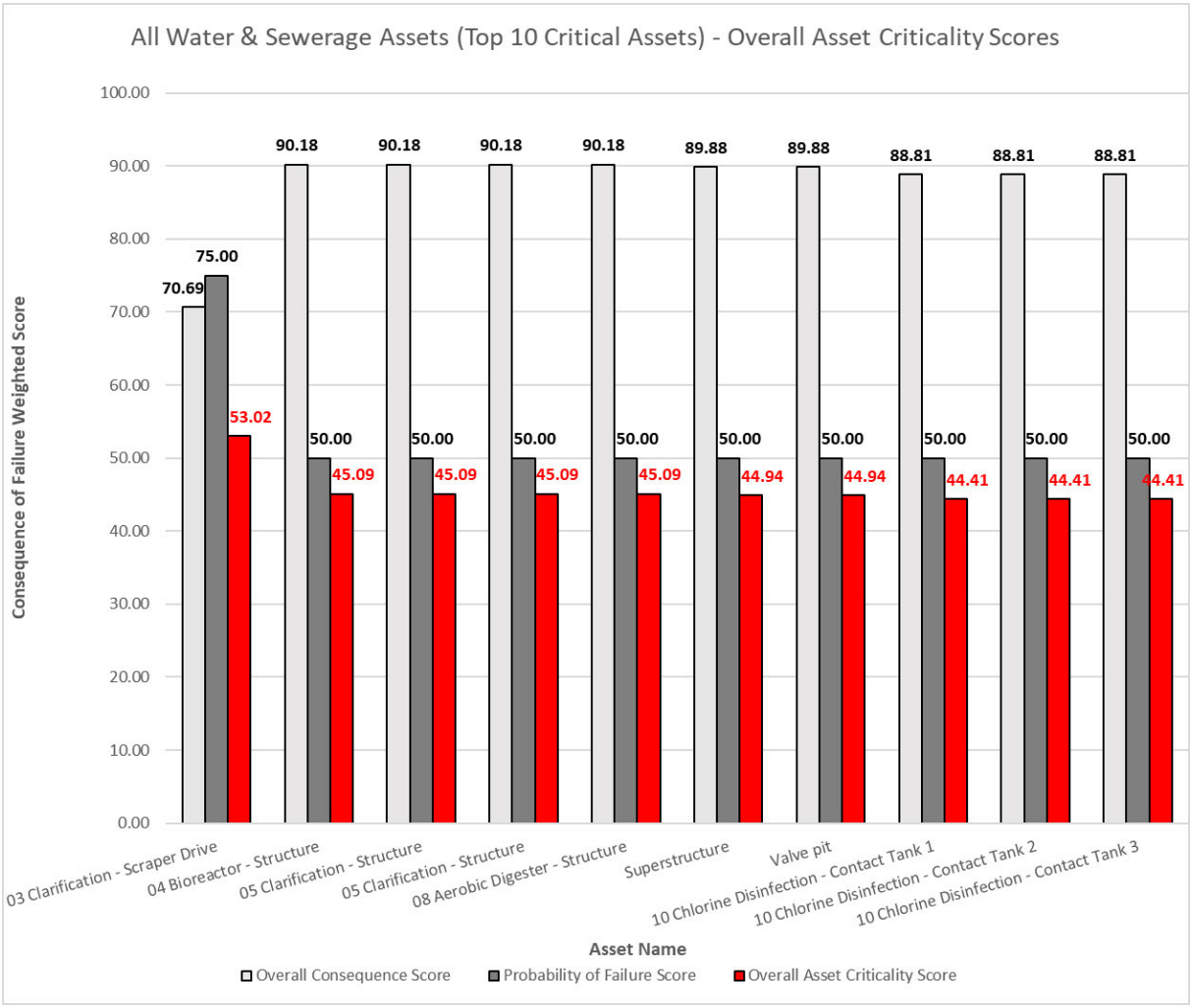


Figure 6-28: All Water & Sewerage Assets Combined Results – Overall Asset Criticality Scores

When considering the consequence of failure with the probability of failure, the pattern is repeated with a probability of failure of 50% being applied to all assets but one with 75%. The poor condition of the water treatment plant clarifier scraper has made it the most critical GRC WBU asset even though its overall consequence of failure score is much lower than some of the others. However, it is noted that if the asset condition is improved to obtain a probability of failure of 50% its overall asset criticality would reduce to 35.35 which would drop it out of the top 10. These results highlight the benefit of using a risk based and dynamic ACA framework. As discussed above, overall the results are generally too close for unique prioritisation but as the high-level assets are broken down into smaller components and asset condition assessment revised that this will improve the granularity.

6.6 Asset Management Program Recommendations

6.6.1 Asset Data Collection

Asset data collection activities should be carried out on all asset categories in the following order of priority (based on the average overall criticality scoring):

1. Sewerage Pump Station
2. Sewerage Treatment Plant

3. Water Treatment Plants
4. Water Reservoir
5. Water Booster Pump Station
6. Raw Water Bore
7. Sewerage Mains
8. Water Mains
9. Water Nodes – Valve
10. Sewerage Nodes
11. Water Nodes – Hydrants
12. Sewerage Services
13. Water Services & Meters

These activities should include:

- Verification of existing asset data
- Break-down of assets into isolated systems or parts
- Collection of new data relevant to the asset that can be used to assess its capacity etc.
- Verification of existing or collection new of asset condition data
- Verification of severity scoring and update of ACA results

6.6.2 Asset Condition Assessment Recommendations

Asset condition assessment activities should be carried out on all asset categories in the following order of priority (based on the average overall criticality scoring):

1. Sewerage Pump Station
2. Sewerage Treatment Plant
3. Water Treatment Plants
4. Water Reservoir
5. Water Booster Pump Station
6. Raw Water Bore
7. Sewerage Mains
8. Water Mains
9. Water Nodes – Valve
10. Sewerage Nodes
11. Water Nodes – Hydrants
12. Sewerage Services
13. Water Services & Meters

Individual asset assessment should be prioritised according to the asset's overall asset criticality score from highest to lowest. This will allow verification the probability of failure and severity and downgrade the criticality of assets prior to performing any maintenance or capital works activities

6.6.3 Maintenance Program Recommendations

Asset maintenance activities should be carried out on all asset categories in the following order of priority (based on the average overall criticality scoring):

1. Sewerage Pump Station
2. Sewerage Treatment Plant

3. Water Treatment Plants
4. Water Reservoir
5. Water Booster Pump Station
6. Raw Water Bore
7. Sewerage Mains
8. Water Mains
9. Water Nodes – Valve
10. Sewerage Nodes
11. Water Nodes – Hydrants
12. Sewerage Services
13. Water Services & Meters

Individual asset maintenance should be prioritised according to the asset's probability of failure score from highest to lowest followed over overall asset criticality score. The assets condition should be verified before performing any maintenance and should be of "Moderate Criticality" or higher.

6.7 Chapter Summary

Chapter 6 discussed the results of the ACA in detail looking at the top 10 assets for each asset category across both asset classes. It was demonstrated through the graph and table results that the framework functioned but with varying degrees of success in terms of true prioritisation with recommendations for framework amendments to be made. Based on the results of the ACA, recommendations were able to be made with respect to asset data collection, condition assessment and maintenance program priorities.

Chapter 7 Conclusions

7.1 Introduction

The aim of this work was to develop an asset prioritisation tool with a documented framework for GRC WBU to assist with making informed decisions regarding the management of their assets. This chapter summarises and discusses the overall outcomes of the dissertation with respect to the following aspects:

- Research Limitations
- Overall conclusions and framework improvement recommendations
- Recommendations for future research by others

7.2 Limitations

Several limitations were encountered and noted during the development of this dissertation. The framework and ACA tool should be treated as preliminary and should be customised and verified with a continuous improvement development program.

The key limitation of the results is that the analysis has only been applied to a sub-set of the total asset data base of over 30,000+ assets. This may have skewed the results towards those that were included in the study and inclusion of additional assets may change the top priorities and average scoring for each asset category. This may change the recommendations for asset data collection, condition assessment and maintenance activities. Once the full asset database has been applied, the results should be reviewed to verify that the results and recommendations still align.

Similarly, the results are heavily dependent on the quality and accuracy of asset data provided from the AMS and GIS systems. It was noted in the study that there are some data gaps, questionable currency of data and disconnects between the AMS and GIS. As there was no feasible way to verify all asset data as part of this work it is essential that asset data, severity scoring, and condition is verified before performing any recommended asset management activities.

While one of the key objectives of the framework was to be based on semi-quantitative data and working towards quantitative, the available data instead required a greater reliance on qualitative data and assessment which increases the potential of unconscious bias within the framework and therefore the results. It is recommended that as asset management practices improve over time, the framework is amended to utilise historic data sources such as a such SCADA logging and modelling software results.

Finally, there was limited detailed literature for risk-based asset criticality analysis of water and sewerage assets, particularly with any reference or relevance to Australian local government. The majority of literature identified did not include a probability of failure (i.e. risk) aspect and therefore the framework was unable to be verified or calibrated against independent research.

7.3 Conclusion

There were three key objectives of the dissertation that were identified in the project specification detailed in Appendix A and discussed in Chapter 1. The first was the development of a documented

ACA framework informed by existing literature and customised to suit the GRC WBU. Assets were categorised and a high-level failure modes and effects analysis (FMEA) applied to each category to determine failure modes. The identified failure modes were used to inform the development of Consequence of Failure criteria. These criteria were aligned with the GRC risk management framework and weighted in terms of relative importance using the AHP process developed by Thomas Saaty. A consequence severity scoring scale and definitions were developed to numerically quantify consequences and support consistent assessment of asset failure consequences. This allowed determination of a static Overall Consequence of Failure Score. A Probability of Failure scoring scale was developed by aligning a mixture of condition assessment scoring data and estimated asset condition based on age with probability of failure. The Consequence of Failure and Probability of Failure scores were combined to derive the dynamic Overall Asset Criticality Score that allowed prioritisation of assets. The documentation of these key aspects throughout Chapter 3 could quickly be adapted to formalise the framework in a standard GRC WBU document format if required.

While the framework and its application were considered successful, it was not without faults. The severity definitions were mostly qualitatively based rather than quantitative or semi-quantitative, introducing the potential for unconscious bias and reducing automated severity scoring potential. While the framework appeared to work appropriately for active assets, passive asset scoring was not always granular enough to uniquely prioritise assets. General observations to correct this suggest that utilising decimal scoring rather than just integers may improve the granularity of results. Similarly, a transition to automated quantitative based scoring and utilising additional data sources such as modelling software may improve the results.

The second key objective was to develop a Microsoft Excel based spreadsheet ACA tool that allowed for the import of data and semi-automated calculation of ACA results based on the developed framework. While not originally planned, a second spreadsheet tool was developed as a working space for raw asset data and scoring calculations before transfer into the main ACA tool. The ACA tool included the weighted criteria scoring and AHP based matrices in a form that allows for dynamic updates to the weightings by modifying the pairwise comparison matrices. The results of the ACA are presented with each assets score across each broad consequence category, the Overall Consequence of Failure, the Probability of Failure and the Overall Asset Criticality Score. This summary allows sorting and ranking of the assets across several different aspects of criticality. Like the framework, the documentation of the ACA tool and its application process discussed in Chapter 5 could quickly be developed into a user guide and encourage improvements of the tool.

Overall, the ACA tool was appropriate for its purpose and performed its intended function without issue. However, ultimately the framework should be implemented into the AMS so that asset data is live and there is a point-of-truth. The AMS is also the natural place to store condition data and asset attributes that can inform automated severity calculations.

The third and final key objective was to analyse the results of the ACA framework and tool in detail. Up to 10 assets at a single site or the top 10 assets from each category were analysed with mixed results. A comparative graph was prepared for both the static Overall Consequence of Failure and dynamic Overall Asset Criticality to help visualise the impact that the Probability of Failure and a risk-based approach had on criticality. The average criticality of each asset category was also determined and compared to consider which categories generally should be prioritised.

As mentioned above, while the framework appeared to work appropriately for active assets, passive asset scoring was not always granular enough to uniquely prioritise assets. This was clear in the top 10 critical assets across all categories in that 7 of the 10 had an equal score with another asset. The comparison between Overall Consequence of Failure and Overall Asset Criticality was interesting as it appeared to confirm the concept that a lower consequence asset with a higher probability of failure

could be more critical than a higher consequence asset. The key example of this was the most critical asset of the study which had a much lower consequence score but was in much poorer condition. This led to the observation that if maintenance actions were performed and condition was improved, the asset would drop down the prioritisation list to a score where an Overall Consequence of Failure only ACA might prioritise it. Without considering Probability of Failure the most critical asset may not have been prioritised for some time.

The development of the ACA framework and tool is a step forward for the GRC WBU with respect to having a documented decision assistance system to support and justify asset management practices including data collection, condition assessment, maintenance management and capital works planning. The framework provides a preliminary foundation for GRC WBU to continuously develop to meet their specific needs.

7.4 Future Work

Throughout the development of the framework and application of the ACA two key observations were made which fell outside the scope of the original project specification.

The main observation is that the framework currently only makes consideration of an assets worst case consequence and assumes catastrophic failure. In reality, catastrophic failure may be very rare but continual minor failures may be common. A key example of this is that large concrete tank structures such as the water treatment plant clarifier and sewerage treatment plant aerobic digestor tank are among the most critical assets in that an explosive wall failure and significant damage is expected, while the reality is more likely to be a leaking crack that can be repaired without a failure event. To address this, it is suggested that a range of low, medium and high consequence failures could be developed for each asset and align with differing probabilities of failure. These scores could be averaged to determine an overall score or remain separated. There are many other possibilities to address this observation.

The secondary observation was that there was very little existing literature for aligning condition assessment scoring with probability of failure and as such the scoring used is not supported by any documented evidence or engineering. To address this it is suggested that research into how condition assessment aligns with probability of failure is completed and that the feasibility of using an estimated condition based on asset age compared with useful life aligned with probability of failure is confirmed.

Other than these key observations, the ACA could be applied to an expanded or entire asset data set and re-analysed to confirm that conclusions made and recommendations made are appropriate. If successful the framework could be standardised and generalised to allow other organisations to adapt the framework and develop their own customised ACA framework and tools.

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Appendix A Project Specification

ENG4111/4112 Research Project

Project Specification

For: Timothy Wood
Title: Development of an Asset Prioritisation Framework for Gympie Regional Council's Water and Sewerage Assets
Major: Civil Engineering
Supervisors: Jo Devine
Sponsorship: Gympie Regional Council
Enrolment: ENG4111 – EXT S1 & 2019 ENG4112 – EXT S2, 2019
Project Aim: To develop and document a framework using a multi-criteria decision analysis model that can be used by GRC to determine the criticality of their infrastructure assets based on risk to help prioritise and improve efficiency of asset management practices (i.e data collection, condition assessment & preventative maintenance programs).

Programme: Version 4, 12th August 2019

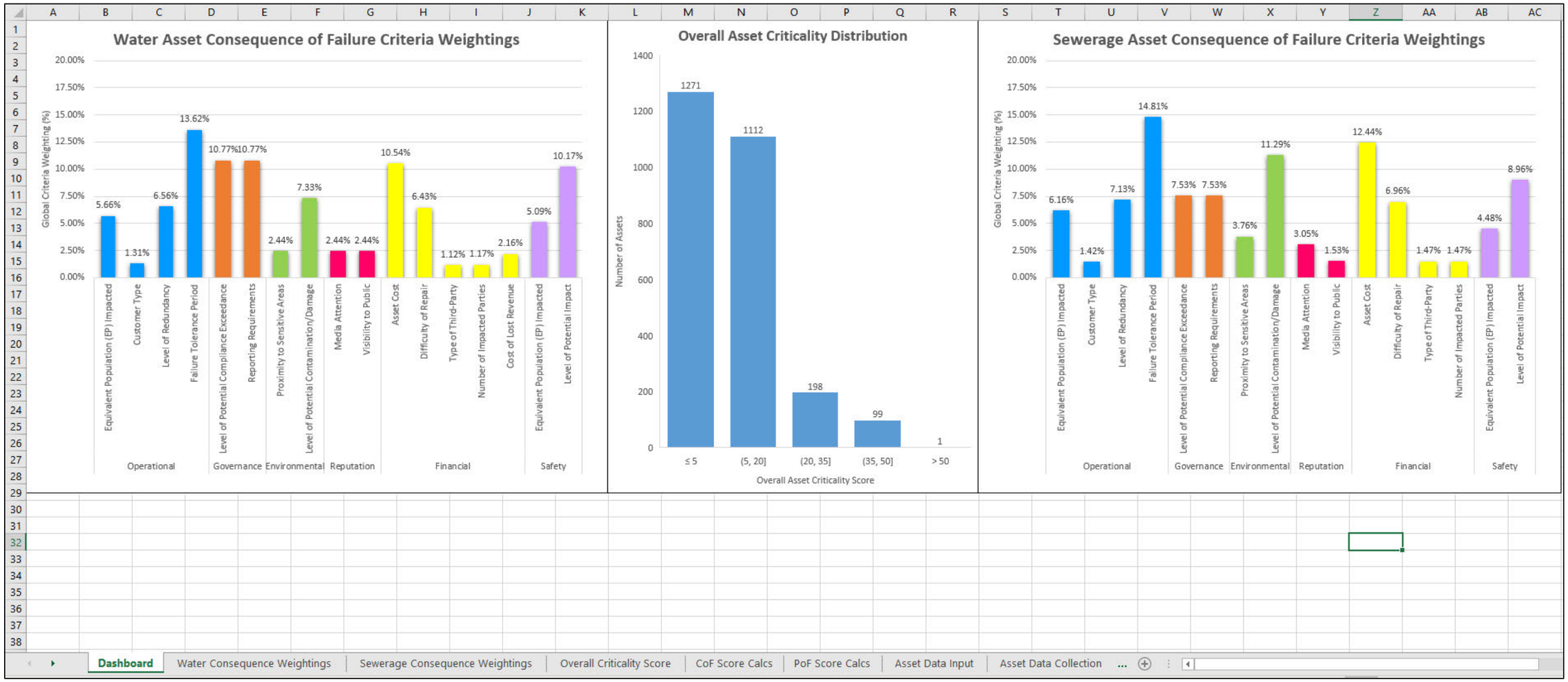
1. Review background information relating to asset management with respect to risk, consequence and impact areas (i.e. social, environmental, financial etc.) within GRC's policies and practices.
2. Review existing multi-criteria decision analysis (MCDA) models (e.g. Analytical Hierarchy Process/Analytical Network Process) with respect to framework input criteria and select the most appropriate model to use in the project.
3. Develop a risk-based asset criticality rating framework and methodologies for water & sewerage infrastructure that align with GRC policies and objectives.
4. Perform a gap analysis of the existing asset management database to identify what data is required before the criticality rating framework can be effectively applied (i.e. what level of detail of asset data capture is required for worthwhile results). Obtain or make relevant assumptions about missing data to ensure model has the data required to work correctly.
5. Apply the framework to GRC's assets using a Microsoft Excel based tool and analyse results.
6. Calibrate framework if required and re-test.
7. Preparation of a data collection improvement program recommendation based on the criticality score.
8. Preparation of a condition assessment program recommendation based on the criticality score.

If time and resources permit:

9. Preparation of a maintenance program recommendation based on the criticality score.

Appendix B Asset Criticality Analysis Tool Screenshots

Dashboard



Water Consequence Weightings

Water Asset Global Consequence Weighting				
Category	**Category Weighting**	**Sub Category**	**Sub Category Weighting**	**Global Weighting**
Operational	27.14	Equivalent Population (EP) Impacted	20.86	5.66
		Customer Type	4.81	1.31
		Level of Redundancy	24.16	6.56
		Failure Tolerance Period	50.17	13.62
Governance	21.53	Level of Potential Compliance Exceedance	50.00	10.77
		Reporting Requirements	50.00	10.77
Environmental	9.77	Proximity to Sensitive Areas	25.00	2.44
		Level of Potential Contamination/Damage	75.00	7.33
Reputation	4.88	Media Attention	50.00	2.44
		Visibility to Public	50.00	2.44
Financial	21.42	Asset Cost	49.20	10.54
		Difficulty of Repair	30.00	6.43
		Type of Third-Party	5.22	1.12
		Number of Impacted Parties	5.48	1.17
		Cost of Lost Revenue	10.09	2.16
Safety	15.26	Equivalent Population (EP) Impacted	33.33	5.09
		Level of Potential Impact	66.67	10.17

Consequence Categorys RAW Comparison	Operational	Governance	Environment	Reputational	Financial	Safety
Operational	1.0000	2.0000	3.0000	4.0000	1.0000	2.0000
Governance	0.5000	1.0000	3.0000	4.0000	1.0000	2.0000
Environment	0.3333	0.3333	1.0000	4.0000	0.3333	0.5000
Reputational	0.2500	0.2500	0.2500	1.0000	0.2500	0.3333
Financial	1.0000	1.0000	3.0000	4.0000	1.0000	1.0000
Safety	0.5000	0.5000	2.0000	3.0000	1.0000	1.0000
Column Totals	**3.5833**	**5.0833**	**12.2500**	**20.0000**	**4.5833**	**6.8333**

Consequence Categorys Normalised Comparison	Operational	Governance	Environment	Reputational	Financial	Safety	Cumulative Normalised Score	Priority Vector
Operational	0.2791	0.3934	0.2449	0.2000	0.2182	0.2927	**1.6283**	27.14
Governance	0.1395	0.1967	0.2449	0.2000	0.2182	0.2927	**1.2920**	21.53
Environment	0.0930	0.0656	0.0816	0.2000	0.0727	0.0732	**0.5861**	9.77
Reputational	0.0698	0.0492	0.0204	0.0500	0.0545	0.0488	**0.2927**	4.88
Financial	0.2791	0.1967	0.2449	0.2000	0.2182	0.1463	**1.2852**	21.42
Safety	0.1395	0.0984	0.1633	0.1500	0.2182	0.1463	**0.9157**	15.26
Column Totals	**1**	**1**	**1**	**1**	**1**	**1**	**6**	

EigenValue Max	6.263974688
CI	0.05
CR	4.26%
CR < 10%?	Yes

Operational Consequence Sub-Categories RAW Comparison	Equivalent Population (EP) Impacted	Customer Type	Level of Redundancy	Failure Tolerance Period
Equivalent Population (EP) Impacted	1.0000	6.0000	1.0000	0.2500
Customer Type	0.1667	1.0000	0.1667	0.1429
Level of Redundancy	1.0000	6.0000	1.0000	0.5000
Failure Tolerance Period	4.0000	7.0000	2.0000	1.0000
Column Totals	**6.1667**	**20.0000**	**4.1667**	**1.8929**

Operational Consequence Sub-Categories Normalised Comparison	Equivalent Population (EP) Impacted	Customer Type	Level of Redundancy	Failure Tolerance Period	Cumulative Normalised Score	Priority Vector
Equivalent Population (EP) Impacted	0.1622	0.3000	0.2400	0.1321	**0.8342**	20.86
Customer Type	0.0270	0.0500	0.0400	0.0755	**0.1925**	4.81
Level of Redundancy	0.1622	0.3000	0.2400	0.2642	**0.9663**	24.16
Failure Tolerance Period	0.6486	0.3500	0.4800	0.5283	**2.0070**	50.17
Column Totals	**1**	**1**	**1**	**1**	**4**	

EigenValue Max	4.204903794
CI	0.07
CR	7.59%
CR < 10%?	Yes

Governance Consequence Sub-Categories RAW Comparison	Level of Potential Compliance Exceedance	Reporting/Escalation Requirements
Level of Potential Compliance Exceedance	1.0000	1.0000
Reporting/Escalation Requirements	1.0000	1.0000
Column Totals	**2.0000**	**2.0000**

Governance Consequence Sub-Categories Normalised Comparison	Level of Potential Compliance Exceedance	Reporting/Escalation Requirements	Cumulative Normalised Score	Priority Vector
Level of Potential Compliance Exceedance	0.5000	0.5000	**1.0000**	50.00
Reporting/Escalation Requirements	0.5000	0.5000	**1.0000**	50.00
Column Totals	**1**	**1**	**2**	

EigenValue Max	2
CI	0.00
CR	0.00%
CR < 10%?	Yes

Environment Consequence Sub-Categories RAW Comparison	Proximity to Sensitive Areas	Level of Potential Contamination/Damage		
Proximity to Sensitive Areas	1.0000	0.3333		
Level of Potential Contamination/Damage	3.0000	1.0000		
Column Totals	**4.0000**	**1.3333**		

Enivornment Consequence Sub-Categories Normalised Comparison	Proximity to Sensitive Areas	Level of Potential Contamination/Damage	Cumulative Normalised Score	Priority Vector
Proximity to Sensitive Areas	0.2500	0.2500	**0.5000**	25.00
Level of Potential Contamination/Damage	0.7500	0.7500	**1.5000**	75.00
Column Totals	**1**	**1**	**2**	

EigenValue Max	2
CI	0.00
CR	0.00%
CR < 10%?	Yes

Reputation Consequence Sub-Categories RAW Comparison	Media Attention	Visibility to Public		
Media Attention	1.0000	1.0000		
Visibility to Public	1.0000	1.0000		
Column Totals	**2.0000**	**2.0000**		

Reputation Consequence Sub-Categories Normalised Comparison	Media Attention	Visibility to Public	Cumulative Normalised Score	Priority Vector
Media Attention	0.5000	0.5000	**1.0000**	50.00
Visibility to Public	0.5000	0.5000	**1.0000**	50.00
Column Totals	**1**	**1**	**2**	

EigenValue Max	2
CI	0.00
CR	0.00%
CR < 10%?	Yes

Financial Consequence Sub-Categories RAW Comparison	Asset Cost	Difficulty of Repair	Type of Third-Party	Number of Impacted Parties	Cost of Lost Revenue		
Asset Cost	1.0000	2.0000	8.0000	8.0000	6.0000		
Difficulty of Repair	0.5000	1.0000	5.0000	5.0000	5.0000		
Type of Third-Party	0.1250	0.2000	1.0000	1.0000	0.3333		
Number of Impacted Parties	0.1250	0.2000	1.0000	1.0000	0.5000		
Cost of Lost Revenue	0.1667	0.2000	3.0000	2.0000	1.0000		
Column Totals	**1.9167**	**3.6000**	**18.0000**	**17.0000**	**12.8333**		

Financial Consequence Sub-Categories Normalised Comparison	Asset Cost	Difficulty of Repair	Type of Third-Party	Number of Impacted Parties	Cost of Lost Revenue	Cumulative Normalised Score	Priority Vector
Asset Cost	0.5217	0.5556	0.4444	0.4706	0.4675	**2.4599**	49.20
Difficulty of Repair	0.2609	0.2778	0.2778	0.2941	0.3896	**1.5002**	30.00
Type of Third-Party	0.0652	0.0556	0.0556	0.0588	0.0260	**0.2611**	5.22
Number of Impacted Parties	0.0652	0.0556	0.0556	0.0588	0.0390	**0.2741**	5.48
Cost of Lost Revenue	0.0870	0.0556	0.1667	0.1176	0.0779	**0.5047**	10.09
Column Totals	**1**	**1**	**1**	**1**	**1**	**5**	

EigenValue Max	5.190614352
CI	0.05
CR	4.25%
CR < 10%?	Yes

Safety Consequence Sub-Categories RAW Comparison	Equivalent Population (EP) Impacted	Level of Potential Impact		
Equivalent Population (EP) Impacted	1.0000	0.5000		
Level of Potential Impact	2.0000	1.0000		
Column Totals	**3.0000**	**1.5000**		

Safety Consequence Sub-Categories Normalised Comparison	Equivalent Population (EP) Impacted	Level of Potential Impact	Cumulative Normalised Score	Priority Vector
Equivalent Population (EP) Impacted	0.3333	0.3333	**0.6667**	33.33
Level of Potential Impact	0.6667	0.6667	**1.3333**	66.67
Column Totals	**1**	**1**	**2**	

EigenValue Max	2
CI	0.00
CR	0.00%
CR < 10%?	Yes

Sewerage Consequence Weightings

Sewerage Asset Global Consequence Weighting				
Category	**Category Weighting**	**Sub Category**	**Sub Category Weighting**	**Global Weighting**
Operational	29.52	Equivalent Population (EP) Impacted	20.86	6.16
		Customer Type	4.81	1.42
		Level of Redundancy	24.16	7.13
		Failure Tolerance Period	50.17	14.81
Governance	15.05	Level of Potential Compliance Exceedance	50.00	7.53
		Reporting Requirements	50.00	7.53
Environmental	15.05	Proximity to Sensitive Areas	25.00	3.76
		Level of Potential Contamination/Damage	75.00	11.29
Reputation	4.58	Media Attention	66.67	3.05
		Visibility to Public	33.33	1.53
Financial	22.35	Asset Cost	55.66	12.44
		Difficulty of Repair	31.16	6.96
		Type of Third-Party	6.59	1.47
		Number of Impacted Parties	6.59	1.47
Safety	13.44	Equivalent Population (EP) Impacted	33.33	4.48
		Level of Potential Impact	66.67	8.96

Consequence Categorys RAW Comparison	Operational	Governance	Environment	Reputational	Financial	Safety
Operational	1.0000	3.0000	3.0000	4.0000	1.0000	2.0000
Governance	0.3333	1.0000	1.0000	4.0000	1.0000	1.0000
Environment	0.3333	1.0000	1.0000	4.0000	1.0000	1.0000
Reputational	0.2500	0.2500	0.2500	1.0000	0.2500	0.2500
Financial	1.0000	1.0000	1.0000	4.0000	1.0000	3.0000
Safety	0.5000	1.0000	1.0000	4.0000	0.3333	1.0000
Column Totals	**3.4167**	**7.2500**	**7.2500**	**21.0000**	**4.5833**	**8.2500**

Consequence Categorys Normalised Comparison	Operational	Governance	Environment	Reputational	Financial	Safety	Cumulative Normalised Score	Priority Vector
Operational	0.2927	0.4138	0.4138	0.1905	0.2182	0.2424	**1.7714**	29.52
Governance	0.0976	0.1379	0.1379	0.1905	0.2182	0.1212	**0.9033**	15.05
Environment	0.0976	0.1379	0.1379	0.1905	0.2182	0.1212	**0.9033**	15.05
Reputational	0.0732	0.0345	0.0345	0.0476	0.0545	0.0303	**0.2746**	4.58
Financial	0.2927	0.1379	0.1379	0.1905	0.2182	0.3636	**1.3408**	22.35
Safety	0.1463	0.1379	0.1379	0.1905	0.0727	0.1212	**0.8066**	13.44
Column Totals	**1**	**1**	**1**	**1**	**1**	**1**	**6**	

EigenValue Max	6.286111526
CI	0.06
CR	4.61%
CR < 10%?	Yes

Operational Consequence Sub-Categories RAW Comparison	Equivalent Population (EP) Impacted	Customer Type	Level of Redundancy	Failure Tolerance Period		
Equivalent Population (EP) Impacted	1.0000	6.0000	1.0000	0.2500		
Customer Type	0.1667	1.0000	0.1667	0.1429		
Level of Redundancy	1.0000	6.0000	1.0000	0.5000		
Failure Tolerance Period	4.0000	7.0000	2.0000	1.0000		
Column Totals	**6.1667**	**20.0000**	**4.1667**	**1.8929**		

Operational Consequence Sub-Categories Normalised Comparison	Equivalent Population (EP) Impacted	Customer Type	Level of Redundancy	Failure Tolerance Period	Cumulative Normalised Score	Priority Vector
Equivalent Population (EP) Impacted	0.1622	0.3000	0.2400	0.1321	**0.8342**	20.86
Customer Type	0.0270	0.0500	0.0400	0.0755	**0.1925**	4.81
Level of Redundancy	0.1622	0.3000	0.2400	0.2642	**0.9663**	24.16
Failure Tolerance Period	0.6486	0.3500	0.4800	0.5283	**2.0070**	50.17
Column Totals	**1**	**1**	**1**	**1**	**4**	

EigenValue Max	4.204903794
CI	0.07
CR	7.59%
CR < 10%?	Yes

Governance Consequence Sub-Categories RAW Comparison	Level of Potential Compliance Exceedance	Reporting/Escalation Requirements		
Level of Potential Compliance Exceedance	1.0000	1.0000		
Reporting/Escalation Requirements	1.0000	1.0000		
Column Totals	**2.0000**	**2.0000**		

Governance Consequence Sub-Categories Normalised Comparison	Level of Potential Compliance Exceedance	Reporting/Escalation Requirements	Cumulative Normalised Score	Priority Vector
Level of Potential Compliance Exceedance	0.5000	0.5000	**1.0000**	50.00
Reporting/Escalation Requirements	0.5000	0.5000	**1.0000**	50.00
Column Totals	**1**	**1**	**2**	

EigenValue Max	2
CI	0.00
CR	0.00%
CR < 10%?	Yes

Environment Consequence Sub-Categories RAW Comparison	Proximity to Sensitive Areas	Level of Potential Contamination/Damage		
Proximity to Sensitive Areas	1.0000	0.3333		
Level of Potential Contamination/Damage	3.0000	1.0000		
Column Totals	**4.0000**	**1.3333**		

Enivornment Consequence Sub-Categories Normalised Comparison	Proximity to Sensitive Areas	Level of Potential Contamination/Damage	Cumulative Normalised Score	Priority Vector
Proximity to Sensitive Areas	0.2500	0.2500	**0.5000**	25.00
Level of Potential Contamination/Damage	0.7500	0.7500	**1.5000**	75.00
Column Totals	**1**	**1**	**2**	

EigenValue Max	2
CI	0.00
CR	0.00%
CR < 10%?	Yes

Reputation Consequence Sub-Categories RAW Comparison	Media Attention	Visibility to Public		
Media Attention	1.0000	2.0000		
Visibility to Public	0.5000	1.0000		
Column Totals	**1.5000**	**3.0000**		

Reputation Consequence Sub-Categories Normalised Comparison	Media Attention	Visibility to Public	Cumulative Normalised Score	Priority Vector
Media Attention	0.6667	0.6667	**1.3333**	66.67
Visibility to Public	0.3333	0.3333	**0.6667**	33.33
Column Totals	**1**	**1**	**2**	

EigenValue Max	2
CI	0.00
CR	0.00%
CR < 10%?	Yes

Financial Consequence Sub-Categories RAW Comparison	Asset Cost	Difficulty of Repair	Type of Third-Party	Number of Impacted Parties		
Asset Cost	1.0000	2.0000	8.0000	8.0000		
Difficulty of Repair	0.5000	1.0000	5.0000	5.0000		
Type of Third-Party	0.1250	0.2000	1.0000	1.0000		
Number of Impacted Parties	0.1250	0.2000	1.0000	1.0000		
Column Totals	**1.7500**	**3.4000**	**15.0000**	**15.0000**		
Financial Consequence Sub-Categories Normalised Comparison	Asset Cost	Difficulty of Repair	Type of Third-Party	Number of Impacted Parties	Cumulative Normalised Score	Priority Vector
Asset Cost	0.5714	0.5882	0.5333	0.5333	**2.2263**	55.66
Difficulty of Repair	0.2857	0.2941	0.3333	0.3333	**1.2465**	31.16
Type of Third-Party	0.0714	0.0588	0.0667	0.0667	**0.2636**	6.59
Number of Impacted Parties	0.0714	0.0588	0.0667	0.0667	**0.2636**	6.59
Column Totals	**1**	**1**	**1**	**1**	**4**	
EigenValue Max	4.010434174					
CI	0.00					
CR	0.39%					
CR < 10%?	Yes					

Safety Consequence Sub-Categories RAW Comparison	Equivalent Population (EP) Impacted	Level of Potential Impact		
Equivalent Population (EP) Impacted	1.0000	0.5000		
Level of Potential Impact	2.0000	1.0000		
Column Totals	**3.0000**	**1.5000**		
Safety Consequence Sub-Categories Normalised Comparison	Equivalent Population (EP) Impacted	Level of Potential Impact	Cumulative Normalised Score	Priority Vector
Equivalent Population (EP) Impacted	0.3333	0.3333	**0.6667**	33.33
Level of Potential Impact	0.6667	0.6667	**1.3333**	66.67
Column Totals	**1**	**1**	**2**	
EigenValue Max	2			
CI	0.00			
CR	0.00%			
CR < 10%?	Yes			

Overall Criticality Score

Asset Number	Asset Class	Parent Asset Name	Asset Name	Operational Score	Governance Score	Environment Score	Reputational Score	Financial Score	Safety Score	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
CIV.001468	Water	Rainbow Beach Bore TWS1	Bore Structure	15.13	8.61	6.84	1.46	11.83	3.05	46.93	50.00	23.47
CIV.001472	Water	Rainbow Beach Bore TWS1	Pipework	12.51	6.46	4.88	2.93	5.87	9.16	41.81	50.00	20.90
CSY.012043	Water	Rainbow Beach Bore TWS1	Telemetry	10.77	6.46	1.95	1.46	8.96	3.05	32.67	50.00	16.33
ELE.001636	Water	Rainbow Beach Bore TWS1	Switchboard	15.13	6.46	1.95	1.46	10.55	11.19	46.75	50.00	23.37
WPU.001704	Water	Rainbow Beach Bore TWS1	Pump Bore	13.82	6.46	6.84	1.46	9.26	3.05	40.90	50.00	20.45
CIV.001341	Water	Kinbombi Creek Weir	Spillway / Embankment	8.39	10.77	5.37	1.46	18.16	3.05	47.20	50.00	23.60
CIV.001342	Water	Kinbombi Creek Weir	Inlet Tower	8.39	10.77	5.37	1.46	14.76	3.05	43.81	50.00	21.91
CIV.001343	Water	Kinbombi Creek Weir	Walkway	7.26	6.46	5.37	1.46	7.68	3.05	31.29	75.00	23.47
CIV.001308	Water	Jones Hill WTP	01 Intake Works - Intake Works	27.14	10.77	5.37	2.44	15.10	13.23	74.04	50.00	37.02
CSY.011997	Water	Jones Hill WTP	01 Intake Works - Intake Works	25.83	6.46	1.95	1.46	11.24	3.05	50.00	50.00	25.00
CIV.001309	Water	Jones Hill WTP	02 Raw Water PS - Pipework	23.20	8.61	4.88	1.46	15.46	13.23	66.85	50.00	33.42
CIV.001310	Water	Jones Hill WTP	02 Raw Water PS - Structure Raw Water PS	25.83	8.61	4.88	2.44	16.74	13.23	71.73	50.00	35.87
CIV.001311	Water	Jones Hill WTP	02 Raw Water PS - Pump well	27.14	10.77	6.84	2.44	21.42	13.23	81.83	50.00	40.91
CIV.001312	Water	Jones Hill WTP	02 Raw Water PS - Valves	25.83	6.46	3.42	1.46	15.46	13.23	65.85	50.00	32.93
WPE.001721	Water	Jones Hill WTP	02 Raw Water PS - Crane	9.36	6.46	1.95	0.98	11.89	11.19	41.83	50.00	20.92
WPU.001648	Water	Jones Hill WTP	02 Raw Water PS - Pump Raw Water A2	21.79	8.61	1.95	1.46	14.18	13.23	61.23	50.00	30.61
WPU.001649	Water	Jones Hill WTP	02 Raw Water PS - Pump Raw Water A4	21.79	8.61	1.95	1.46	14.18	13.23	61.23	50.00	30.61
WPU.001650	Water	Jones Hill WTP	02 Raw Water PS - Pump Raw Water A1	21.79	8.61	1.95	1.46	14.18	13.23	61.23	50.00	30.61
CIV.001313	Water	Jones Hill WTP	03 Clarification - Tank Clarifier	27.14	10.77	4.40	2.44	21.42	15.26	81.42	50.00	40.71
WPE.001722	Water	Jones Hill WTP	03 Clarification - Scraper Drive	23.10	12.92	1.95	1.46	18.03	13.23	70.69	75.00	53.02
WPE.001723	Water	Jones Hill WTP	03 Clarification - Clarifier	23.10	15.07	1.95	1.46	18.03	13.23	72.85	50.00	36.42
CIV.001314	Water	Jones Hill WTP	04 Floculation - Tank Floculation	27.14	10.77	4.40	2.44	19.31	15.26	79.31	50.00	39.66
WPE.001724	Water	Jones Hill WTP	04 Floculation - Mixer	23.10	15.07	1.95	1.46	18.03	13.23	72.85	50.00	36.42
CIV.001315	Water	Jones Hill WTP	06 Filtration - Valves	23.10	8.61	3.42	1.46	18.85	15.26	70.71	50.00	35.36
CIV.001316	Water	Jones Hill WTP	06 Filtration - Tank Filtration	27.14	10.77	3.42	2.44	21.42	15.26	80.44	50.00	40.22
CSY.011998	Water	Jones Hill WTP	06 Filtration - Filtration	27.14	15.07	3.42	2.44	18.03	15.26	81.36	50.00	40.68
WPE.001725	Water	Jones Hill WTP	06 Filtration - Filter	27.14	15.07	3.42	2.44	18.03	15.26	81.36	50.00	40.68
WPU.001653	Water	Jones Hill WTP	08 Clear Water PS - Pump Clear Water B2	21.79	8.61	1.95	1.46	16.74	15.26	65.83	50.00	32.91
WPU.001654	Water	Jones Hill WTP	08 Clear Water PS - Pump Clear Water B1	21.79	8.61	1.95	1.46	16.74	15.26	65.83	50.00	32.91
WPU.001651	Water	Jones Hill WTP	08 Clear Water PS - Pump Clear Water C1	21.79	8.61	1.95	1.46	14.63	15.26	63.72	50.00	31.86
WPU.001652	Water	Jones Hill WTP	08 Clear Water PS - Pump Clear Water C2	21.79	8.61	1.95	1.46	14.63	15.26	63.72	50.00	31.86
CIV.001319	Water	Jones Hill WTP	09 Backwash System - Tank Backwash	24.41	15.07	5.86	1.46	21.42	15.26	83.49	50.00	41.75
CIV.001318	Water	Jones Hill WTP	09 Backwash System - Backwash Tank	21.79	6.46	1.95	0.98	11.24	15.26	57.68	50.00	28.84
CIV.001321	Water	Jones Hill WTP	09 Backwash System - Tank Backwash 1	10.67	6.46	3.91	1.46	15.75	3.05	41.30	50.00	20.65
CIV.001317	Water	Jones Hill WTP	09 Backwash System - Backwash Tank	8.05	6.46	1.95	0.98	9.78	3.05	30.28	50.00	15.14
CIV.001320	Water	Jones Hill WTP	09 Backwash System - Tank Backwash 2	8.05	6.46	1.95	0.98	9.78	3.05	30.28	50.00	15.14

CoF Score Calcs

Asset Number	Asset Class	Asset Category	Operational				Governance		Environmental		Reputation		Financial					Safety	
			Equivalent Population (EP) Impacted Score	Customer Type Score	Level of Redundancy Score	Failure Tolerance Period Score	Level of Potential Compliance Exceedance Score	Reporting Requirements Score	Proximity to Sensitive Areas Score	Level of Potential Contamination/Damage Score	Media Attention Score	Visibility to Public Score	Asset Cost Score	Difficulty of Repair Score	Type of Third-Party Score	Number of Impacted Parties Score	Cost of Lost Revenue Score	Equivalent Population (EP) Impacted Score	Level of Potential Impact Score
CIV.001468	Water	Civil	3	4	4	2	1	3	5	3	2	1	2	4	3	4	2	1	1
CIV.001472	Water	Civil	3	4	2	2	1	2	4	2	3	3	1	1	3	4	2	1	4
CSY 012043	Water	Control Systems	1	1	3	2	1	2	1	1	2	1	2	3	1	1	1	1	1
ELE.001636	Water	Electrical	3	4	4	2	1	2	1	1	2	1	2	3	3	4	2	1	5
WPU.001704	Water	Water Pump	3	4	3	2	1	2	5	3	2	1	2	2	3	4	2	1	1
CIV.001341	Water	Civil	2	3	2	1	2	3	5	2	2	1	5	4	3	4	2	1	1
CIV.001342	Water	Civil	2	3	2	1	2	3	5	2	2	1	4	3	3	4	2	1	1
CIV.001343	Water	Civil	1	3	2	1	1	2	5	2	2	1	2	2	1	1	1	1	1
CIV.001308	Water	Civil	5	5	5	5	1	4	5	2	4	1	2	5	5	5	5	5	4
CSY 011997	Water	Control Systems	5	5	4	5	1	2	1	1	2	1	2	2	5	5	5	1	1
CIV.001309	Water	Civil	5	5	2	5	1	3	4	2	2	1	4	2	5	5	5	5	4
CIV.001310	Water	Civil	5	5	4	5	1	3	4	2	4	1	4	3	5	5	5	5	4
CIV.001311	Water	Civil	5	5	5	5	1	4	5	3	4	1	5	5	5	5	5	5	4
CIV.001312	Water	Civil	5	5	4	5	1	2	1	2	2	1	4	2	5	5	5	5	4
WPE.001721	Water	Water Plant & Equipment	1	1	4	1	1	2	1	1	1	1	4	2	1	1	1	1	5
WPU.001648	Water	Water Pump	5	5	3	4	1	3	1	1	2	1	3	3	4	4	5	5	4
WPU.001649	Water	Water Pump	5	5	3	4	1	3	1	1	2	1	3	3	4	4	5	5	4
WPU.001650	Water	Water Pump	5	5	3	4	1	3	1	1	2	1	3	3	4	4	5	5	4
CIV.001313	Water	Civil	5	5	5	5	1	4	3	2	4	1	5	5	5	5	5	5	5
WPE.001722	Water	Water Plant & Equipment	5	5	4	4	3	3	1	1	2	1	4	4	5	5	5	5	4
WPE.001723	Water	Water Plant & Equipment	5	5	4	4	3	4	1	1	2	1	4	4	5	5	5	5	4
CIV.001314	Water	Civil	5	5	5	5	1	4	3	2	4	1	4	5	5	5	5	5	5
WPE.001724	Water	Water Plant & Equipment	5	5	4	4	3	4	1	1	2	1	4	4	5	5	5	5	4
CIV.001315	Water	Civil	5	5	4	4	1	3	1	2	2	1	5	3	5	5	5	5	5
CIV.001316	Water	Civil	5	5	5	5	1	4	1	2	4	1	5	5	5	5	5	5	5
CSY 011998	Water	Control Systems	5	5	5	5	3	4	1	2	4	1	4	4	5	5	5	5	5
WPE.001725	Water	Water Plant & Equipment	5	5	5	5	3	4	1	2	4	1	4	4	5	5	5	5	5
WPU.001653	Water	Water Pump	5	5	3	4	1	3	1	1	2	1	4	3	5	5	5	5	5
WPU.001654	Water	Water Pump	5	5	3	4	1	3	1	1	2	1	4	3	5	5	5	5	5
WPU.001651	Water	Water Pump	5	5	3	4	1	3	1	1	2	1	3	3	5	5	5	5	5
WPU.001652	Water	Water Pump	5	5	3	4	1	3	1	1	2	1	3	3	5	5	5	5	5
CIV.001319	Water	Civil	5	5	5	4	3	4	3	3	2	1	5	5	5	5	5	5	5
CIV.001318	Water	Civil	5	5	3	4	1	2	1	1	1	1	2	2	5	5	5	5	5
CIV.001321	Water	Civil	1	1	5	1	1	2	2	2	2	1	4	5	1	1	1	1	1
CIV.001317	Water	Civil	1	1	3	1	1	2	1	1	1	1	3	2	1	1	1	1	1
CIV.001320	Water	Civil	1	1	3	1	1	2	1	1	1	1	3	2	1	1	1	1	1
CIV.001323	Water	Civil	5	5	4	3	1	3	3	2	2	1	4	4	1	1	5	1	1
ELE.001605	Water	Electrical	5	5	3	3	1	2	1	1	1	1	3	3	1	1	5	1	5
WPE.001726	Water	Water Plant & Equipment	5	5	4	3	1	3	1	1	1	1	4	3	1	1	5	1	4
WPE.001727	Water	Water Plant & Equipment	5	5	4	3	1	2	1	1	1	1	3	3	1	1	5	1	1
WPE.001729	Water	Water Plant & Equipment	5	5	3	3	1	2	1	1	1	1	1	2	1	1	5	1	1
WPU.001655	Water	Water Pump	5	5	3	3	1	2	1	1	1	1	1	2	1	1	5	1	1
WPU.001656	Water	Water Pump	5	5	2	3	1	2	1	1	1	1	2	2	1	1	5	1	1
WPU.001657	Water	Water Pump	5	5	2	3	1	2	1	1	1	1	2	2	1	1	5	1	1

PoF Score Calcs

Probability of Failure Scoring Definitions			
Condition Assessment Score	**Likelihood of Failure Assessment**	**Probability of Failure (%)**	**Description**
5	Almost Certain	100	Expected to occur within a year
4	Very High	75	Estimated 75% chance of occurring in any year
3	High	50	Estimated 50% chance of occurring in any year
2	Moderate	25	Estimated 25% chance of occurring in any year
1	Low	10	Estimated 10% chance of occurring in any year

Assessment Date for Estimated Condition Rating	12/10/2019

Asset Number	Actual or Estimated	Condition Score	Construction Date	Useful Life (Years)	Estimated Condition Rating	Probability of Failure Score (%)
CIV.001468	Actual	3	30/06/2005	60	1	50
CIV.001472	Actual	3	30/06/2005	80	1	50
CSY.012043	Actual	3	30/06/2005	15	5	50
ELE.001636	Actual	3	30/06/2005	25	3	50
WPU.001704	Actual	3	30/06/2005	40	2	50
CIV.001341	Actual	3	30/06/1957	80	4	50
CIV.001342	Actual	3	30/06/1977	80	3	50
CIV.001343	Actual	4	30/06/1977	40	5	75
CIV.001308	Actual	3	30/06/1970	70	4	50
CSY.011997	Actual	3	30/06/2003	70	1	50
CIV.001309	Actual	3	1/01/1980	60	3	50
CIV.001310	Actual	3	1/01/1980	45	4	50
CIV.001311	Actual	3	30/06/1900	118	5	50
CIV.001312	Actual	3	1/01/1980	38	5	50
WPE.001721	Actual	3	30/06/1943	75	5	50
WPU.001648	Actual	3	30/06/2007	12	5	50
WPU.001649	Actual	3	30/06/2007	12	5	50
WPU.001650	Actual	3	30/06/2006	13	5	50
CIV.001313	Actual	3	30/06/1943	75	5	50
WPE.001722	Actual	4	30/06/1996	30	4	75
WPE.001723	Actual	3	30/06/1996	70	2	50
CIV.001314	Actual	3	30/06/1943	75	5	50
WPE.001724	Actual	3	30/06/1943	75	5	50
CIV.001315	Actual	3	1/01/2012	25	2	50

Appendix C Asset Criticality Analysis Results

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WPE.001722	Jones Hill WTP	03 Clarification - Scraper Drive	70.69	75.00	53.02
CIV.000990	Gympie Sewerage Treatment Plant	04 Bioreactor - Structure	90.18	50.00	45.09
CIV.000992	Gympie Sewerage Treatment Plant	05 Clarification - Structure	90.18	50.00	45.09
CIV.000994	Gympie Sewerage Treatment Plant	05 Clarification - Structure	90.18	50.00	45.09
CIV.000997	Gympie Sewerage Treatment Plant	08 Aerobic Digester - Structure	90.18	50.00	45.09
CIV.001054	Gympie Sewerage Pump Station G1	Superstructure	89.88	50.00	44.94
CIV.001055	Gympie Sewerage Pump Station G1	Valve pit	89.88	50.00	44.94
CIV.001003	Gympie Sewerage Treatment Plant	10 Chlorine Disinfection - Contact Tank 1	88.81	50.00	44.41
CIV.001004	Gympie Sewerage Treatment Plant	10 Chlorine Disinfection - Contact Tank 2	88.81	50.00	44.41
CIV.001005	Gympie Sewerage Treatment Plant	10 Chlorine Disinfection - Contact Tank 3	88.81	50.00	44.41
CIV.001009	Gympie Sewerage Treatment Plant	12 Siteworks - Pipework	86.51	50.00	43.25
CIV.001319	Jones Hill WTP	09 Backwash System - Tank Backwash	83.49	50.00	41.75
ELE.001525	Gympie Sewerage Pump Station G1	Switchboard	83.48	50.00	41.74
CIV.001053	Gympie Sewerage Pump Station G1	Pipework	83.14	50.00	41.57
SPE.048143	Gympie Sewerage Treatment Plant	10 Chlorine Disinfection - Mechanical	82.41	50.00	41.21
SPE.048144	Gympie Sewerage Treatment Plant	10 Chlorine Disinfection - Vacuum Regulators	82.41	50.00	41.21
SPE.048145	Gympie Sewerage Treatment Plant	10 Chlorine Disinfection - Contact Tank 1	82.41	50.00	41.21
SPE.048146	Gympie Sewerage Treatment Plant	10 Chlorine Disinfection - Contact Tank 2	82.41	50.00	41.21
SPE.048147	Gympie Sewerage Treatment Plant	10 Chlorine Disinfection - Contact Tank 3	82.41	50.00	41.21
CIV.000983	Gympie Sewerage Treatment Plant	02 Flow Balance - Structure	82.26	50.00	41.13
CIV.001311	Jones Hill WTP	02 Raw Water PS - Pump well	81.83	50.00	40.91
CIV.001313	Jones Hill WTP	03 Clarification - Tank Clarifier	81.42	50.00	40.71
CSY.011998	Jones Hill WTP	06 Filtration - Filtration	81.36	50.00	40.68
WPE.001725	Jones Hill WTP	06 Filtration - Filter	81.36	50.00	40.68
CSY.011999	Jones Hill WTP	11 Chemical Dosing - Fluoride Dosing	80.96	50.00	40.48
CIV.001316	Jones Hill WTP	06 Filtration - Tank Filtration	80.44	50.00	40.22
CIV.001325	Jones Hill WTP	11 Chemical Dosing - Powder Silo	79.86	50.00	39.93
CIV.001326	Jones Hill WTP	11 Chemical Dosing - Powder Silo	79.86	50.00	39.93
CIV.001327	Jones Hill WTP	11 Chemical Dosing - Tank Dosing	79.86	50.00	39.93
CIV.000969	Gympie Sewerage Treatment Plant	01 Inlet works - Structure	79.78	50.00	39.89
CIV.000972	Gympie Sewerage Treatment Plant	01b Inlet works - Structure	79.78	50.00	39.89
CIV.000979	Gympie Sewerage Treatment Plant	02 Flow Balance - Structure	79.78	50.00	39.89
CIV.000981	Gympie Sewerage Treatment Plant	02 Flow Balance - Structure	79.78	50.00	39.89
CSY.012000	Jones Hill WTP	11 Chemical Dosing - Chlorine Dosing	79.50	50.00	39.75
CIV.001314	Jones Hill WTP	04 Floculation - Tank Floculation	79.31	50.00	39.66
SPE.048151	Gympie Sewerage Pump Station G1	Mechanical	79.23	50.00	39.62
SPE.048101	Gympie Sewerage Treatment Plant	01a Inlet works - Inlet Band Screen	78.35	50.00	39.18
SPE.048119	Gympie Sewerage Treatment Plant	04 Bioreactor - Aeration Reactor	78.35	50.00	39.18
SPE.048125	Gympie Sewerage Treatment Plant	05 Clarification - Mechanical	78.35	50.00	39.18
SPE.048130	Gympie Sewerage Treatment Plant	05 Clarification - Mechanical	78.35	50.00	39.18
SPE.048132	Gympie Sewerage Treatment Plant	08 Aerobic Digester - Blowers	78.35	50.00	39.18
CIV.000971	Gympie Sewerage Treatment Plant	01 Inlet works - Penstock Valves	77.77	50.00	38.89
CIV.000977	Gympie Sewerage Treatment Plant	01d Inlet works - Structure	77.29	50.00	38.64
SPE.048149	Gympie Sewerage Treatment Plant	12 Siteworks - Generator	76.92	50.00	38.46
SPU.047962	Gympie Sewerage Pump Station G1	Pump 2	76.74	50.00	38.37
SPU.047963	Gympie Sewerage Pump Station G1	Pump 1	76.74	50.00	38.37
SPE.048104	Gympie Sewerage Treatment Plant	01b Inlet works - Grit Vortex Stirrer	75.86	50.00	37.93
SPE.048110	Gympie Sewerage Treatment Plant	02 Flow Balance - Mechanical	75.86	50.00	37.93
SPE.048111	Gympie Sewerage Treatment Plant	02 Flow Balance - Mixers	75.86	50.00	37.93
SPE.048112	Gympie Sewerage Treatment Plant	02 Flow Balance - Mechanical	75.86	50.00	37.93
SPE.048113	Gympie Sewerage Treatment Plant	02 Flow Balance - Mixers	75.86	50.00	37.93
SPE.048114	Gympie Sewerage Treatment Plant	02 Flow Balance - Mechanical	75.86	50.00	37.93
SPE.048115	Gympie Sewerage Treatment Plant	02 Flow Balance - Mixers	75.86	50.00	37.93
SPE.048118	Gympie Sewerage Treatment Plant	04 Bioreactor - Mixers	75.86	50.00	37.93
SPE.048126	Gympie Sewerage Treatment Plant	05 Clarification - Sludge Blanket	75.86	50.00	37.93
SPE.048127	Gympie Sewerage Treatment Plant	05 Clarification - Sludge Blanket	75.86	50.00	37.93
SPU.047943	Gympie Sewerage Treatment Plant	02a Bioreactor Feed PS - Pump 1 Bioreactor Feed PS	75.86	50.00	37.93

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SPU.047946	Gympie Sewerage Treatment Plant	06 RAS PS - Pump RAS PS	75.86	50.00	37.93
SPU.047947	Gympie Sewerage Treatment Plant	07 Scum PS - Pump Scum PS	75.86	50.00	37.93
SPU.047949	Gympie Sewerage Treatment Plant	09b Filtration - Pump Belt Filter Press Feed PS	75.86	50.00	37.93
CIV.000985	Gympie Sewerage Treatment Plant	02a Bioreactor Feed PS - Pipework	75.56	50.00	37.78
CIV.001390	Wine Glass HL Reservoir	Structure	74.92	50.00	37.46
CSY.011823	Gympie Sewerage Treatment Plant	10 Chlorine Disinfection - Auto Shutoff System	74.80	50.00	37.40
CIV.000984	Gympie Sewerage Treatment Plant	02a Bioreactor Feed PS - Structure	74.47	50.00	37.24
CIV.001308	Jones Hill WTP	01 Intake Works - Intake Works	74.04	50.00	37.02
SPE.048099	Gympie Sewerage Treatment Plant	01 Inlet works - Mechanical	73.38	50.00	36.69
SPE.048100	Gympie Sewerage Treatment Plant	01a Inlet works - Screenings Screw Press	73.38	50.00	36.69
SPE.048102	Gympie Sewerage Treatment Plant	01a Inlet works - Mechanical	73.38	50.00	36.69
SPE.048105	Gympie Sewerage Treatment Plant	01b Inlet works - Mechanical	73.38	50.00	36.69
SPE.048106	Gympie Sewerage Treatment Plant	01b Inlet works - Grit Classifier	73.38	50.00	36.69
SPE.048108	Gympie Sewerage Treatment Plant	01c Inlet works - Mechanical	73.38	50.00	36.69
SPE.048109	Gympie Sewerage Treatment Plant	01d Inlet works - Mechanical	73.38	50.00	36.69
SPE.048117	Gympie Sewerage Treatment Plant	04 Bioreactor - Mechanical	73.38	50.00	36.69
SPE.048120	Gympie Sewerage Treatment Plant	04 Bioreactor - Mechanical	73.38	50.00	36.69
SPE.048121	Gympie Sewerage Treatment Plant	04 Bioreactor - Mechanical	73.38	50.00	36.69
SPE.048131	Gympie Sewerage Treatment Plant	07 Scum PS - Mechanical	73.38	50.00	36.69
SPE.048140	Gympie Sewerage Treatment Plant	09b Filtration - Mechanical	73.38	50.00	36.69
SPE.048142	Gympie Sewerage Treatment Plant	09c Filtration - Mechanical	73.38	50.00	36.69
SPU.047941	Gympie Sewerage Treatment Plant	01b Inlet works - Pump Vortex Grit removal	73.38	50.00	36.69
SPU.047944	Gympie Sewerage Treatment Plant	02a Bioreactor Feed PS - Pump 2 Bioreactor Feed PS	73.38	50.00	36.69
SPU.047950	Gympie Sewerage Treatment Plant	09c Filtration - Pump Filtrate Return PS	73.38	50.00	36.69
SPU.047951	Gympie Sewerage Treatment Plant	10 Service Water PS - Pump Service Water PS	73.38	50.00	36.69
ELE.001608	Jones Hill WTP	12 Siteworks - Electrical	73.25	50.00	36.63
CIV.000986	Gympie Sewerage Treatment Plant	02a Bioreactor Feed PS - Valves	73.08	50.00	36.54
WPE.001731	Jones Hill WTP	11 Chemical Dosing - Chlorinator	72.95	50.00	36.47
WPE.001732	Jones Hill WTP	11 Chemical Dosing - Chlorinator	72.95	50.00	36.47
WPE.001723	Jones Hill WTP	03 Clarification - Clarifier	72.85	50.00	36.42
WPE.001724	Jones Hill WTP	04 Floculation - Mixer	72.85	50.00	36.42
WMA.009238	0	Water 150 AC: Nodes 1 - TP	48.56	75.00	36.42
CIV.000976	Gympie Sewerage Treatment Plant	01d Inlet works - Penstock Valves	72.80	50.00	36.40
CIV.001310	Jones Hill WTP	02 Raw Water PS - Structure Raw Water PS	71.73	50.00	35.87
ELE.001607	Jones Hill WTP	12 Siteworks - Switchboard	71.15	50.00	35.57
SPE.048107	Gympie Sewerage Treatment Plant	01c Inlet works - Agitator	70.89	50.00	35.44
SPE.048141	Gympie Sewerage Treatment Plant	09b Filtration - Mechanical	70.89	50.00	35.44
SPE.048148	Gympie Sewerage Treatment Plant	10 Service Water PS - Mechanical	70.89	50.00	35.44
SPU.047942	Gympie Sewerage Treatment Plant	01c Inlet works - Pump Magnesium Dosing	70.89	50.00	35.44
SPU.047945	Gympie Sewerage Treatment Plant	04 Bioreactor - Pump Alum Dosing	70.89	50.00	35.44
SMA.062449	0	Sewer RM 100: Nodes PS-R4 - Line PS-R1:PS-R1 Junction 1	70.75	50.00	35.38
SMA.062450	0	Sewer RM 100: Nodes PS-R5 - PS-R4	70.75	50.00	35.38
CIV.001315	Jones Hill WTP	06 Filtration - Valves	70.71	50.00	35.36
CIV.001000	Gympie Sewerage Treatment Plant	08 Aerobic Digester - Valves	70.59	50.00	35.29
CIV.001002	Gympie Sewerage Treatment Plant	09c Filtration - Wet Well	70.59	50.00	35.29
SMA.062063	0	Sewer 225 <1.5m deep: Nodes R1/2 - R1/1	70.56	50.00	35.28
CIV.001329	Jones Hill WTP	12 Siteworks - Pipework	69.37	50.00	34.69
CIV.001007	Gympie Sewerage Treatment Plant	11 Effluent Storage - Effluent Storage	69.36	50.00	34.68
CSY.012003	Jones Hill WTP	12 Siteworks - Telemetry	69.04	50.00	34.52
CSY.012002	Jones Hill WTP	12 Siteworks - Siteworks	68.55	50.00	34.27
SMA.062062	0	Sewer 225 <1.5m deep: Nodes R1/1 - PS-R1	68.07	50.00	34.04
CIV.001331	Jones Hill WTP	12 Siteworks - Valves	67.26	50.00	33.63
CIV.001309	Jones Hill WTP	02 Raw Water PS - Pipework	66.85	50.00	33.42
CIV.001312	Jones Hill WTP	02 Raw Water PS - Valves	65.85	50.00	32.93
WPU.001653	Jones Hill WTP	08 Clear Water PS - Pump Clear Water B2	65.83	50.00	32.91
WPU.001654	Jones Hill WTP	08 Clear Water PS - Pump Clear Water B1	65.83	50.00	32.91
CIV.000975	Gympie Sewerage Treatment Plant	01c Inlet works - Tank	65.06	50.00	32.53
CIV.000995	Gympie Sewerage Treatment Plant	06 RAS PS - Structure	65.01	50.00	32.51
CIV.000996	Gympie Sewerage Treatment Plant	07 Scum PS - Wet Well	65.01	50.00	32.51
ELE.001606	Jones Hill WTP	11 Chemical Dosing - Switchboard	64.33	50.00	32.17

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WPE.001734	Jones Hill WTP	11 Chemical Dosing - Dry Feeder	64.33	50.00	32.17
WPE.001735	Jones Hill WTP	11 Chemical Dosing - Dry Feeder	64.33	50.00	32.17
WPE.001736	Jones Hill WTP	11 Chemical Dosing - Injectors	64.33	50.00	32.17
WPU.001651	Jones Hill WTP	08 Clear Water PS - Pump Clear Water C1	63.72	50.00	31.86
WPU.001652	Jones Hill WTP	08 Clear Water PS - Pump Clear Water C2	63.72	50.00	31.86
SPE.048122	Gympie Sewerage Treatment Plant	04 Bioreactor - Scum Harvester	63.60	50.00	31.80
SMA.058495	0	Sewer 150 <1.5m deep: Nodes R1/18 - R1/17	63.40	50.00	31.70
SMA.058508	0	Sewer 150 <1.5m deep: Nodes R1/3 - R1/2	63.40	50.00	31.70
SMA.058510	0	Sewer 150 <1.5m deep: Nodes R1/31 - R1/30	63.40	50.00	31.70
SMA.058514	0	Sewer 150 <1.5m deep: Nodes R1/35 - R1/34	63.40	50.00	31.70
SMA.058517	0	Sewer 150 <1.5m deep: Nodes R1/6 - R1/5	63.40	50.00	31.70
SMA.058520	0	Sewer 150 <1.5m deep: Nodes R1/9 - R1/8	63.40	50.00	31.70
SMA.058521	0	Sewer 150 <1.5m deep: Nodes R1a/1 - R1/2	63.40	50.00	31.70
SPE.048103	Gympie Sewerage Treatment Plant	01a Inlet works - Manual Screen	63.06	50.00	31.53
CSY.012001	Jones Hill WTP	11 Chemical Dosing - PLC	62.56	50.00	31.28
WMA.008785	0	Water 100 AC: Nodes 10 - 12	41.47	75.00	31.10
WMA.009337	0	Water 150 AC: Nodes 2 - 1	41.11	75.00	30.83
WPU.001648	Jones Hill WTP	02 Raw Water PS - Pump Raw Water A2	61.23	50.00	30.61
WPU.001649	Jones Hill WTP	02 Raw Water PS - Pump Raw Water A4	61.23	50.00	30.61
WPU.001650	Jones Hill WTP	02 Raw Water PS - Pump Raw Water A1	61.23	50.00	30.61
WMA.009242	0	Water 150 AC: Nodes 20 - 2	40.62	75.00	30.46
WMA.009338	0	Water 150 AC: Nodes 19 - 20	40.62	75.00	30.46
SMA.058487	0	Sewer 150 <1.5m deep: Nodes R1/10 - R1/9	60.92	50.00	30.46
SMA.058488	0	Sewer 150 <1.5m deep: Nodes R1/11 - R1/10	60.92	50.00	30.46
SMA.058489	0	Sewer 150 <1.5m deep: Nodes R1/12 - R1/11	60.92	50.00	30.46
SMA.058490	0	Sewer 150 <1.5m deep: Nodes R1/13 - R1/12	60.92	50.00	30.46
SMA.058491	0	Sewer 150 <1.5m deep: Nodes R1/14 - R1/13	60.92	50.00	30.46
SMA.058492	0	Sewer 150 <1.5m deep: Nodes R1/15 - R1/14	60.92	50.00	30.46
SMA.058493	0	Sewer 150 <1.5m deep: Nodes R1/16 - R1/15	60.92	50.00	30.46
SMA.058494	0	Sewer 150 <1.5m deep: Nodes R1/17 - R1/16	60.92	50.00	30.46
SMA.058497	0	Sewer 150 <1.5m deep: Nodes R1/20 - R1/19	60.92	50.00	30.46
SMA.058498	0	Sewer 150 <1.5m deep: Nodes R1/21 - R1/20	60.92	50.00	30.46
SMA.058499	0	Sewer 150 <1.5m deep: Nodes R1/21 - R1/820	60.92	50.00	30.46
SMA.058500	0	Sewer 150 <1.5m deep: Nodes R1/22 - R1/21	60.92	50.00	30.46
SMA.058501	0	Sewer 150 <1.5m deep: Nodes R1/23 - R1/22	60.92	50.00	30.46
SMA.058502	0	Sewer 150 <1.5m deep: Nodes R1/24 - R1/23	60.92	50.00	30.46
SMA.058503	0	Sewer 150 <1.5m deep: Nodes R1/25 - R1/24	60.92	50.00	30.46
SMA.058504	0	Sewer 150 <1.5m deep: Nodes R1/26 - R1/25	60.92	50.00	30.46
SMA.058505	0	Sewer 150 <1.5m deep: Nodes R1/27 - R1/26	60.92	50.00	30.46
SMA.058506	0	Sewer 150 <1.5m deep: Nodes R1/28 - R1/27	60.92	50.00	30.46
SMA.058507	0	Sewer 150 <1.5m deep: Nodes R1/29 - R1/28	60.92	50.00	30.46
SMA.058509	0	Sewer 150 <1.5m deep: Nodes R1/30 - R1/29	60.92	50.00	30.46
SMA.058511	0	Sewer 150 <1.5m deep: Nodes R1/32 - R1/31	60.92	50.00	30.46
SMA.058512	0	Sewer 150 <1.5m deep: Nodes R1/33 - R1/32	60.92	50.00	30.46
SMA.058513	0	Sewer 150 <1.5m deep: Nodes R1/34 - R1/33	60.92	50.00	30.46
SMA.058515	0	Sewer 150 <1.5m deep: Nodes R1/4 - R1/3	60.92	50.00	30.46
SMA.058516	0	Sewer 150 <1.5m deep: Nodes R1/5 - R1/4	60.92	50.00	30.46
SMA.058518	0	Sewer 150 <1.5m deep: Nodes R1/7 - R1/6	60.92	50.00	30.46
SMA.058519	0	Sewer 150 <1.5m deep: Nodes R1/8 - R1/7	60.92	50.00	30.46
SMA.058694	0	Sewer 150 <1.5m deep: Nodes R1m/1 - R1/8	60.92	50.00	30.46
WMA.008811	0	Water 100 AC: Nodes 14 - 12	39.36	75.00	29.52
WMA.008912	0	Water 100 AC: Nodes 85 - 6	39.36	75.00	29.52
WMA.009058	0	Water 100 AC: Nodes 16 - 17	39.36	75.00	29.52
WMA.009085	0	Water 100 AC: Nodes 38 - 47	39.36	75.00	29.52
SPE.048123	Gympie Sewerage Treatment Plant	05 Clarification - Scum Collector	58.62	50.00	29.31
SPE.048128	Gympie Sewerage Treatment Plant	05 Clarification - Scum Collector	58.62	50.00	29.31
WMA.008777	0	Water 100 AC: Nodes 20 - 46	38.88	75.00	29.16
WMA.008779	0	Water 100 AC: Nodes 15 - 16	38.88	75.00	29.16
WMA.008781	0	Water 100 AC: Nodes 42 - 37	38.88	75.00	29.16
WMA.008793	0	Water 100 AC: Nodes 15 - 92	38.88	75.00	29.16

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WMA.008794	0	Water 100 AC: Nodes 24 - 22	38.88	75.00	29.16
WMA.008802	0	Water 100 AC: Nodes 13 - 15	38.88	75.00	29.16
WMA.008818	0	Water 100 AC: Nodes 18 - 17	38.88	75.00	29.16
WMA.008825	0	Water 100 AC: Nodes 37 - 34	38.88	75.00	29.16
WMA.008827	0	Water 100 AC: Nodes 49 - 47	38.88	75.00	29.16
WMA.008830	0	Water 100 AC: Nodes 3 - 2	38.88	75.00	29.16
WMA.008842	0	Water 100 AC: Nodes 16 - 87	38.88	75.00	29.16
WMA.008843	0	Water 100 AC: Nodes 22 - 21	38.88	75.00	29.16
WMA.008868	0	Water 100 AC: Nodes 45 - 35	38.88	75.00	29.16
WMA.008869	0	Water 100 AC: Nodes 44 - 33	38.88	75.00	29.16
WMA.008874	0	Water 100 AC: Nodes 5 - 92	38.88	75.00	29.16
WMA.008919	0	Water 100 AC: Nodes 86 - 87	38.88	75.00	29.16
WMA.008926	0	Water 100 AC: Nodes 87 - 3	38.88	75.00	29.16
WMA.008954	0	Water 100 AC: Nodes 4 - 3	38.88	75.00	29.16
WMA.009055	0	Water 100 AC: Nodes 31 - 46	38.88	75.00	29.16
WMA.009061	0	Water 100 AC: Nodes 5 - 4	38.88	75.00	29.16
WMA.009062	0	Water 100 AC: Nodes 17 - 19	38.88	75.00	29.16
WMA.009063	0	Water 100 AC: Nodes 43 - 34	38.88	75.00	29.16
WMA.009070	0	Water 100 AC: Nodes 35 - 32	38.88	75.00	29.16
WMA.009084	0	Water 100 AC: Nodes 6 - 5	38.88	75.00	29.16
WMA.008776	0	Water 100 AC: Nodes 21 - 19	38.64	75.00	28.98
CIV.001318	Jones Hill WTP	09 Backwash System - Backwash Tank	57.68	50.00	28.84
SMH.052641	0	Sewer MH <1.5m deep: Node R1/12	57.65	50.00	28.83
SMH.052646	0	Sewer MH <1.5m deep: Node R1/17	57.65	50.00	28.83
SMH.052647	0	Sewer MH <1.5m deep: Node R1/18	57.65	50.00	28.83
SMH.052648	0	Sewer MH <1.5m deep: Node R1/19	57.65	50.00	28.83
SMH.052649	0	Sewer MH <1.5m deep: Node R1/2	57.65	50.00	28.83
SMH.052650	0	Sewer MH <1.5m deep: Node R1/20	57.65	50.00	28.83
SMH.052651	0	Sewer MH <1.5m deep: Node R1/21	57.65	50.00	28.83
SMH.052652	0	Sewer MH <1.5m deep: Node R1/22	57.65	50.00	28.83
SMH.052654	0	Sewer MH <1.5m deep: Node R1/24	57.65	50.00	28.83
SMH.052655	0	Sewer MH <1.5m deep: Node R1/25	57.65	50.00	28.83
SMH.052660	0	Sewer MH <1.5m deep: Node R1/3	57.65	50.00	28.83
SMH.052662	0	Sewer MH <1.5m deep: Node R1/31	57.65	50.00	28.83
SMH.052663	0	Sewer MH <1.5m deep: Node R1/32	57.65	50.00	28.83
SMH.052664	0	Sewer MH <1.5m deep: Node R1/33	57.65	50.00	28.83
SMH.052666	0	Sewer MH <1.5m deep: Node R1/35	57.65	50.00	28.83
SMH.052669	0	Sewer MH <1.5m deep: Node R1/6	57.65	50.00	28.83
SMH.052672	0	Sewer MH <1.5m deep: Node R1a/16	57.65	50.00	28.83
SMH.052676	0	Sewer MH <1.5m deep: Node R1a/12	57.65	50.00	28.83
SMH.052677	0	Sewer MH <1.5m deep: Node R1a/11	57.65	50.00	28.83
SMH.052678	0	Sewer MH <1.5m deep: Node R1a/14	57.65	50.00	28.83
SMH.052689	0	Sewer MH <1.5m deep: Node R1a/3	57.65	50.00	28.83
SMH.052690	0	Sewer MH <1.5m deep: Node R1a/4	57.65	50.00	28.83
SMH.052693	0	Sewer MH <1.5m deep: Node R1a/7	57.65	50.00	28.83
SMH.052694	0	Sewer MH <1.5m deep: Node R1a/8	57.65	50.00	28.83
SMH.052695	0	Sewer MH <1.5m deep: Node R1a/9	57.65	50.00	28.83
SMH.052704	0	Sewer MH <1.5m deep: Node R1a1/6	57.65	50.00	28.83
SMH.052711	0	Sewer MH <1.5m deep: Node R1a1/4	57.65	50.00	28.83
SMH.055040	0	Sewer MH >=1.5m deep: Node R1/9	57.65	50.00	28.83
WMS.M345718	0	Water Service - 20mm	28.40	100.00	28.40
WMS.M900026	0	Water Service - 20mm	28.40	100.00	28.40
WMR.M345718	0	Water Meter - 20mm	28.40	100.00	28.40
WMR.M900026	0	Water Meter - 20mm	28.40	100.00	28.40
WPE.001726	Jones Hill WTP	10 Sludge Dewatering - Belt Filter Press	55.99	50.00	27.99
WMA.008801	0	Water 100 AC: Nodes 12 - 13	37.26	75.00	27.94
WMA.008815	0	Water 100 AC: Nodes 33 - 32	37.26	75.00	27.94
WMA.008916	0	Water 100 AC: Nodes 9 - 8	37.26	75.00	27.94
WMA.009060	0	Water 100 AC: Nodes 23 - 22	37.26	75.00	27.94
CIV.001330	Jones Hill WTP	12 Siteworks - Access Road	55.60	50.00	27.80

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WMA.008782	0	Water 100 AC: Nodes 39 - 38	36.77	75.00	27.58
WMA.008792	0	Water 100 AC: Nodes 8 - 10	36.77	75.00	27.58
WMA.008809	0	Water 100 AC: Nodes 93 - 4	36.77	75.00	27.58
WMA.008810	0	Water 100 AC: Nodes 37 - 36	36.77	75.00	27.58
WMA.008819	0	Water 100 AC: Nodes 32 - 31	36.77	75.00	27.58
WMA.008826	0	Water 100 AC: Nodes 49 - 102	36.77	75.00	27.58
WMA.008828	0	Water 100 AC: Nodes 47 - 48	36.77	75.00	27.58
WMA.008836	0	Water 100 AC: Nodes 46 - 49	36.77	75.00	27.58
WMA.008961	0	Water 100 AC: Nodes 38 - 36	36.77	75.00	27.58
WMA.009065	0	Water 100 AC: Nodes 34 - 33	36.77	75.00	27.58
WMA.009069	0	Water 100 AC: Nodes 36 - 35	36.77	75.00	27.58
WHV.002726	0	Valve Sluice 200-225	36.51	75.00	27.38
WHV.002728	0	Valve Sluice 200-225	36.51	75.00	27.38
WHV.002730	0	Valve Sluice 250-300	36.51	75.00	27.38
WHV.002741	0	Valve Sluice 250-300	36.51	75.00	27.38
WHV.002742	0	Valve Sluice 250-300	36.51	75.00	27.38
SMH.076220	0	Sewer MH <1.5m deep: Node R1a/9a	54.12	50.00	27.06
SMH.076230	0	Sewer MH >=1.5m deep: Node R1d/3a	54.12	50.00	27.06
CIV.001323	Jones Hill WTP	10 Sludge Dewatering - Tank Clarifier	54.10	50.00	27.05
CIV.000998	Gympie Sewerage Treatment Plant	08 Aerobic Digester - Coating	35.58	75.00	26.69
ELE.001630	Rainbow Beach Booster Station	Switchboard	52.99	50.00	26.50
SMH.052713	0	Sewer MH <1.5m deep: Node R1a1a/3	52.89	50.00	26.44
SMH.052719	0	Sewer MH <1.5m deep: Node R1a1a/7	52.89	50.00	26.44
SMH.052720	0	Sewer MH <1.5m deep: Node R1a1a/9	52.89	50.00	26.44
SMH.052728	0	Sewer MH <1.5m deep: Node R1a1c/1	52.89	50.00	26.44
SMH.052731	0	Sewer MH <1.5m deep: Node R1a2/1	52.89	50.00	26.44
SMH.052734	0	Sewer MH <1.5m deep: Node R1a2/5	52.89	50.00	26.44
SMH.052743	0	Sewer MH <1.5m deep: Node R1a3/8	52.89	50.00	26.44
SMH.052744	0	Sewer MH <1.5m deep: Node R1a3/10	52.89	50.00	26.44
SMH.052745	0	Sewer MH <1.5m deep: Node R1a3/9	52.89	50.00	26.44
SMH.052747	0	Sewer MH <1.5m deep: Node R1a3/1	52.89	50.00	26.44
SMH.052748	0	Sewer MH <1.5m deep: Node R1a3/2	52.89	50.00	26.44
SMH.052751	0	Sewer MH <1.5m deep: Node R1a3a1/2	52.89	50.00	26.44
SMH.052752	0	Sewer MH <1.5m deep: Node R1a3a1/1	52.89	50.00	26.44
SMH.052753	0	Sewer MH <1.5m deep: Node R1a3a/2	52.89	50.00	26.44
SMH.052754	0	Sewer MH <1.5m deep: Node R1a3a/3	52.89	50.00	26.44
SMH.052758	0	Sewer MH <1.5m deep: Node R1a4/5	52.89	50.00	26.44
SMH.052760	0	Sewer MH <1.5m deep: Node R1a4/6	52.89	50.00	26.44
SMH.052761	0	Sewer MH <1.5m deep: Node R1a4/3	52.89	50.00	26.44
SMH.052763	0	Sewer MH <1.5m deep: Node R1a4/1	52.89	50.00	26.44
SMH.052787	0	Sewer MH <1.5m deep: Node R1c/1	52.89	50.00	26.44
SMH.052788	0	Sewer MH <1.5m deep: Node R1d/1	52.89	50.00	26.44
SMH.052794	0	Sewer MH <1.5m deep: Node R1d1/2	52.89	50.00	26.44
SMH.052795	0	Sewer MH <1.5m deep: Node R1d1/1	52.89	50.00	26.44
SMH.052796	0	Sewer MH <1.5m deep: Node R1d2/2	52.89	50.00	26.44
SMH.052798	0	Sewer MH <1.5m deep: Node R1d3/2	52.89	50.00	26.44
SMH.052800	0	Sewer MH <1.5m deep: Node R1e/1	52.89	50.00	26.44
SMH.052801	0	Sewer MH <1.5m deep: Node R1e/2	52.89	50.00	26.44
SMH.052802	0	Sewer MH <1.5m deep: Node R1f/1	52.89	50.00	26.44
SMH.052803	0	Sewer MH <1.5m deep: Node R1f/2	52.89	50.00	26.44
SMH.052804	0	Sewer MH <1.5m deep: Node R1f/3	52.89	50.00	26.44
SMH.052805	0	Sewer MH <1.5m deep: Node R1g/1	52.89	50.00	26.44
SMH.052808	0	Sewer MH <1.5m deep: Node R1g/4	52.89	50.00	26.44
SMH.052809	0	Sewer MH <1.5m deep: Node R1g/5	52.89	50.00	26.44
SMH.052810	0	Sewer MH <1.5m deep: Node R1g/6	52.89	50.00	26.44
SMH.052814	0	Sewer MH <1.5m deep: Node R1g1/1	52.89	50.00	26.44
SMH.052815	0	Sewer MH <1.5m deep: Node R1g1/3	52.89	50.00	26.44
SMH.052817	0	Sewer MH <1.5m deep: Node R1h/2	52.89	50.00	26.44
SMH.052821	0	Sewer MH <1.5m deep: Node R1i/11	52.89	50.00	26.44
SMH.052822	0	Sewer MH <1.5m deep: Node R1i/10	52.89	50.00	26.44

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SMH.052824	0	Sewer MH <1.5m deep: Node R1i/2	52.89	50.00	26.44
SMH.052825	0	Sewer MH <1.5m deep: Node R1i/3	52.89	50.00	26.44
SMH.052826	0	Sewer MH <1.5m deep: Node R1i/4	52.89	50.00	26.44
SMH.052827	0	Sewer MH <1.5m deep: Node R1i/5	52.89	50.00	26.44
SMH.052828	0	Sewer MH <1.5m deep: Node R1i/6	52.89	50.00	26.44
SMH.052830	0	Sewer MH <1.5m deep: Node R1i/8	52.89	50.00	26.44
SMH.052831	0	Sewer MH <1.5m deep: Node R1i/9	52.89	50.00	26.44
SMH.052832	0	Sewer MH <1.5m deep: Node R1i1/1	52.89	50.00	26.44
SMH.052834	0	Sewer MH <1.5m deep: Node R1j/2	52.89	50.00	26.44
ELE.001605	Jones Hill WTP	10 Sludge Dewatering - Switchboard	52.45	50.00	26.23
CIV.001322	Jones Hill WTP	10 Sludge Dewatering - Wet Well	51.99	50.00	26.00
CSY.012036	Rainbow Beach Booster Station	Booster PS	51.47	50.00	25.73
SMA.058527	0	Sewer 150 <1.5m deep: Nodes R1a/15 - R1a/14	51.17	50.00	25.58
SMA.058561	0	Sewer 150 <1.5m deep: Nodes R1a1/5 - R1a1/4	51.17	50.00	25.58
SMA.058601	0	Sewer 150 <1.5m deep: Nodes R1a3/2 - R1a3/1	51.17	50.00	25.58
CSY.011997	Jones Hill WTP	01 Intake Works - Intake Works	50.00	50.00	25.00
SMA.058522	0	Sewer 150 <1.5m deep: Nodes R1a/10 - R1a/9	49.93	50.00	24.97
SMA.058532	0	Sewer 150 <1.5m deep: Nodes R1a/2 - R1a/1	49.93	50.00	24.97
SMA.058541	0	Sewer 150 <1.5m deep: Nodes R1a/3 - R1a/2	49.93	50.00	24.97
SMA.058542	0	Sewer 150 <1.5m deep: Nodes R1a/4 - R1a/3	49.93	50.00	24.97
SMA.058545	0	Sewer 150 <1.5m deep: Nodes R1a/7 - R1a/6	49.93	50.00	24.97
SMA.058547	0	Sewer 150 <1.5m deep: Nodes R1a/9 - R1a/8	49.93	50.00	24.97
SMA.058555	0	Sewer 150 <1.5m deep: Nodes R1a1/2 - R1a1/1	49.93	50.00	24.97
SMA.058556	0	Sewer 150 <1.5m deep: Nodes R1a1/3 - R1a1/2	49.93	50.00	24.97
SMA.058557	0	Sewer 150 <1.5m deep: Nodes R1a1/3 - R1a1/2	49.93	50.00	24.97
SMA.058559	0	Sewer 150 <1.5m deep: Nodes R1a1/4 - R1a1/3	49.93	50.00	24.97
SMA.058563	0	Sewer 150 <1.5m deep: Nodes R1a1/7 - R1a1/6	49.93	50.00	24.97
SMA.058564	0	Sewer 150 <1.5m deep: Nodes R1a1/8 - R1a1/7	49.93	50.00	24.97
SMA.058565	0	Sewer 150 <1.5m deep: Nodes R1a1/9 - R1a1/8	49.93	50.00	24.97
SMA.058566	0	Sewer 150 <1.5m deep: Nodes R1a1a/911 - R1a1a/10	49.93	50.00	24.97
SMA.058583	0	Sewer 150 <1.5m deep: Nodes R1a1b/1 - R1a1/2	49.93	50.00	24.97
SMA.058584	0	Sewer 150 <1.5m deep: Nodes R1a1b/3 - R1a1b/2	49.93	50.00	24.97
SMA.058585	0	Sewer 150 <1.5m deep: Nodes R1a1b/2 - R1a1b/1	49.93	50.00	24.97
SMA.058589	0	Sewer 150 <1.5m deep: Nodes R1a2/2 - R1a2/1	49.93	50.00	24.97
SMA.058590	0	Sewer 150 <1.5m deep: Nodes R1a2/3 - R1a2/2	49.93	50.00	24.97
SMA.058595	0	Sewer 150 <1.5m deep: Nodes R1a2a/1 - R1a2/3	49.93	50.00	24.97
SMA.058598	0	Sewer 150 <1.5m deep: Nodes R1a2d/1 - R1a2/4	49.93	50.00	24.97
SMA.058599	0	Sewer 150 <1.5m deep: Nodes R1a3/10 - R1a3/9	49.93	50.00	24.97
SMA.058603	0	Sewer 150 <1.5m deep: Nodes R1a3/4 - R1a3/3	49.93	50.00	24.97
SMA.058605	0	Sewer 150 <1.5m deep: Nodes R1a3/6 - R1a3/5	49.93	50.00	24.97
SMA.058606	0	Sewer 150 <1.5m deep: Nodes R1a3/7 - R1a3/6	49.93	50.00	24.97
SMA.058609	0	Sewer 150 <1.5m deep: Nodes R1a3a/1 - R1a3/4	49.93	50.00	24.97
SMA.058610	0	Sewer 150 <1.5m deep: Nodes R1a3a/2 - R1a3a/1	49.93	50.00	24.97
SMA.058614	0	Sewer 150 <1.5m deep: Nodes R1a3a1/2 - R1a3a1/1	49.93	50.00	24.97
SMA.058618	0	Sewer 150 <1.5m deep: Nodes R1a4/2 - R1a4/1	49.93	50.00	24.97
SMA.058619	0	Sewer 150 <1.5m deep: Nodes R1a4/3 - R1a4/2	49.93	50.00	24.97
SMA.058620	0	Sewer 150 <1.5m deep: Nodes R1a4/4 - R1a4/3	49.93	50.00	24.97
SMA.058636	0	Sewer 150 <1.5m deep: Nodes R1a9/1 - R1/2	49.93	50.00	24.97
SMA.058640	0	Sewer 150 <1.5m deep: Nodes R1b/3 - R1b/2	49.93	50.00	24.97
SMA.058641	0	Sewer 150 <1.5m deep: Nodes R1b/4 - R1b/3	49.93	50.00	24.97
SMA.058643	0	Sewer 150 <1.5m deep: Nodes R1d/1 - R1/4	49.93	50.00	24.97
SMA.058644	0	Sewer 150 <1.5m deep: Nodes R1d/2 - R1d/1	49.93	50.00	24.97
SMA.058645	0	Sewer 150 <1.5m deep: Nodes R1d/3 - R1d/2	49.93	50.00	24.97
SMA.058647	0	Sewer 150 <1.5m deep: Nodes R1d/5 - R1d/4	49.93	50.00	24.97
SMA.058648	0	Sewer 150 <1.5m deep: Nodes R1d/6 - R1d/5	49.93	50.00	24.97
SMA.058649	0	Sewer 150 <1.5m deep: Nodes R1d1/1 - R1d/1	49.93	50.00	24.97
SMA.058650	0	Sewer 150 <1.5m deep: Nodes R1d1/2 - R1d1/1	49.93	50.00	24.97
SMA.058660	0	Sewer 150 <1.5m deep: Nodes R1g/1 - R1/12	49.93	50.00	24.97
SMA.058663	0	Sewer 150 <1.5m deep: Nodes R1g/3 - R1g/2	49.93	50.00	24.97
SMA.058664	0	Sewer 150 <1.5m deep: Nodes R1g/4 - R1g/3	49.93	50.00	24.97

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SMA.058666	0	Sewer 150 <1.5m deep: Nodes R1g/6 - R1g/5	49.93	50.00	24.97
SMA.058667	0	Sewer 150 <1.5m deep: Nodes R1g/7 - R1g/6	49.93	50.00	24.97
SMA.058670	0	Sewer 150 <1.5m deep: Nodes R1g1/3 - R1g1/2	49.93	50.00	24.97
SMA.058671	0	Sewer 150 <1.5m deep: Nodes R1h/1 - R1/14	49.93	50.00	24.97
SMA.058676	0	Sewer 150 <1.5m deep: Nodes R1h1/2 - R1g1/1	49.93	50.00	24.97
SMA.058678	0	Sewer 150 <1.5m deep: Nodes R1i/10 - R1i/9	49.93	50.00	24.97
SMA.058688	0	Sewer 150 <1.5m deep: Nodes R1i/9 - R1i/8	49.93	50.00	24.97
SMA.058689	0	Sewer 150 <1.5m deep: Nodes R1i1/1 - R1i/10	49.93	50.00	24.97
SMA.058690	0	Sewer 150 <1.5m deep: Nodes R1j/1 - R1/25	49.93	50.00	24.97
SMA.061454	0	Sewer 150 >=1.5m deep: Nodes R1a/5 - R1a/4b	49.93	50.00	24.97
CSY.011809	Gympie Sewerage Treatment Plant	04 Bioreactor - Instrumentation	48.94	50.00	24.47
SMA.058523	0	Sewer 150 <1.5m deep: Nodes R1a/11 - R1a/10	47.45	50.00	23.72
SMA.058524	0	Sewer 150 <1.5m deep: Nodes R1a/12 - R1a/11	47.45	50.00	23.72
SMA.058525	0	Sewer 150 <1.5m deep: Nodes R1a/13 - R1a/12	47.45	50.00	23.72
SMA.058526	0	Sewer 150 <1.5m deep: Nodes R1a/14 - R1a/13	47.45	50.00	23.72
SMA.058528	0	Sewer 150 <1.5m deep: Nodes R1a/16 - R1a/15	47.45	50.00	23.72
SMA.058543	0	Sewer 150 <1.5m deep: Nodes R1a/4a - R1a/4	47.45	50.00	23.72
SMA.058544	0	Sewer 150 <1.5m deep: Nodes R1a/6 - R1a/5	47.45	50.00	23.72
SMA.058548	0	Sewer 150 <1.5m deep: Nodes R1a1/1b - R1a/3	47.45	50.00	23.72
SMA.058549	0	Sewer 150 <1.5m deep: Nodes R1a1/10 - R1a1/9	47.45	50.00	23.72
SMA.058560	0	Sewer 150 <1.5m deep: Nodes R1a1/5 - R1a1d/5	47.45	50.00	23.72
SMA.058567	0	Sewer 150 <1.5m deep: Nodes R1a1a/4 - R1a1a/3	47.45	50.00	23.72
SMA.058587	0	Sewer 150 <1.5m deep: Nodes R1a1c/1 - R1a1/9	47.45	50.00	23.72
SMA.058588	0	Sewer 150 <1.5m deep: Nodes R1a2/1 - R1a/11	47.45	50.00	23.72
SMA.058591	0	Sewer 150 <1.5m deep: Nodes R1a2/4 - R1a2/3	47.45	50.00	23.72
SMA.058592	0	Sewer 150 <1.5m deep: Nodes R1a2/5 - R1a2/4	47.45	50.00	23.72
SMA.058593	0	Sewer 150 <1.5m deep: Nodes R1a2/6 - R1a2/5	47.45	50.00	23.72
SMA.058594	0	Sewer 150 <1.5m deep: Nodes R1a2/7 - R1a2/6	47.45	50.00	23.72
SMA.058597	0	Sewer 150 <1.5m deep: Nodes R1a2b/2 - R1a2d/1	47.45	50.00	23.72
SMA.058600	0	Sewer 150 <1.5m deep: Nodes R1a3/1 - R1a/14	47.45	50.00	23.72
SMA.058602	0	Sewer 150 <1.5m deep: Nodes R1a3/3 - R1a3/2	47.45	50.00	23.72
SMA.058604	0	Sewer 150 <1.5m deep: Nodes R1a3/5 - R1a3/4	47.45	50.00	23.72
SMA.058607	0	Sewer 150 <1.5m deep: Nodes R1a3/8 - R1a3/7	47.45	50.00	23.72
SMA.058608	0	Sewer 150 <1.5m deep: Nodes R1a3/9 - R1a3/8	47.45	50.00	23.72
SMA.058611	0	Sewer 150 <1.5m deep: Nodes R1a3a/3 - R1a3a/2	47.45	50.00	23.72
SMA.058612	0	Sewer 150 <1.5m deep: Nodes R1a3a/4 - R1a3a/3	47.45	50.00	23.72
SMA.058615	0	Sewer 150 <1.5m deep: Nodes R1a3a1/1 - R1a3a/2	47.45	50.00	23.72
SMA.058616	0	Sewer 150 <1.5m deep: Nodes R1a3b/1 - R1a3/5	47.45	50.00	23.72
SMA.058617	0	Sewer 150 <1.5m deep: Nodes R1a4/1 - R1a/16	47.45	50.00	23.72
SMA.058621	0	Sewer 150 <1.5m deep: Nodes R1a4/5 - R1a4/5	47.45	50.00	23.72
SMA.058622	0	Sewer 150 <1.5m deep: Nodes R1a4/6 - R1a4/5	47.45	50.00	23.72
SMA.058637	0	Sewer 150 <1.5m deep: Nodes R1a9/2 - R1a9/1	47.45	50.00	23.72
SMA.058638	0	Sewer 150 <1.5m deep: Nodes R1b/1 - R1/83	47.45	50.00	23.72
SMA.058639	0	Sewer 150 <1.5m deep: Nodes R1b/2 - R1b/1	47.45	50.00	23.72
SMA.058642	0	Sewer 150 <1.5m deep: Nodes R1c/1 - R1/3	47.45	50.00	23.72
SMA.058646	0	Sewer 150 <1.5m deep: Nodes R1d/4 - R1d/3	47.45	50.00	23.72
SMA.058651	0	Sewer 150 <1.5m deep: Nodes R1d2/1 - R1d/1	47.45	50.00	23.72
SMA.058652	0	Sewer 150 <1.5m deep: Nodes R1d2/2 - R1d2/1	47.45	50.00	23.72
SMA.058653	0	Sewer 150 <1.5m deep: Nodes R1d3/1 - R1d/2	47.45	50.00	23.72
SMA.058654	0	Sewer 150 <1.5m deep: Nodes R1d3/2 - R1d3/1	47.45	50.00	23.72
SMA.058655	0	Sewer 150 <1.5m deep: Nodes R1e/1 - R1/5	47.45	50.00	23.72
SMA.058656	0	Sewer 150 <1.5m deep: Nodes R1e/2 - R1e/1	47.45	50.00	23.72
SMA.058657	0	Sewer 150 <1.5m deep: Nodes R1f/1 - R1/10	47.45	50.00	23.72
SMA.058658	0	Sewer 150 <1.5m deep: Nodes R1f/2 - R1f/1	47.45	50.00	23.72
SMA.058659	0	Sewer 150 <1.5m deep: Nodes R1f/3 - R1f/2	47.45	50.00	23.72
SMA.058661	0	Sewer 150 <1.5m deep: Nodes R1g/2 - R1g/1	47.45	50.00	23.72
SMA.058662	0	Sewer 150 <1.5m deep: Nodes R1g/2 - R1g/1	47.45	50.00	23.72
SMA.058665	0	Sewer 150 <1.5m deep: Nodes R1g/5 - R1g/4	47.45	50.00	23.72
SMA.058668	0	Sewer 150 <1.5m deep: Nodes R1g/8 - R1g/7	47.45	50.00	23.72
SMA.058669	0	Sewer 150 <1.5m deep: Nodes R1g1/1 - R1g/4	47.45	50.00	23.72

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SMA.058673	0	Sewer 150 <1.5m deep: Nodes R1h/2 - R1h/1	47.45	50.00	23.72
SMA.058674	0	Sewer 150 <1.5m deep: Nodes R1h/3 - R1h/2	47.45	50.00	23.72
SMA.058677	0	Sewer 150 <1.5m deep: Nodes R1i/1 - R1/20	47.45	50.00	23.72
SMA.058679	0	Sewer 150 <1.5m deep: Nodes R1i/11 - R1i/10	47.45	50.00	23.72
SMA.058680	0	Sewer 150 <1.5m deep: Nodes R1i/12 - R1i/11	47.45	50.00	23.72
SMA.058681	0	Sewer 150 <1.5m deep: Nodes R1i/2 - R1i/1	47.45	50.00	23.72
SMA.058682	0	Sewer 150 <1.5m deep: Nodes R1i/3 - R1i/2	47.45	50.00	23.72
SMA.058683	0	Sewer 150 <1.5m deep: Nodes R1i/4 - R1i/3	47.45	50.00	23.72
SMA.058684	0	Sewer 150 <1.5m deep: Nodes R1i/5 - R1i/4	47.45	50.00	23.72
SMA.058685	0	Sewer 150 <1.5m deep: Nodes R1i/6 - R1i/5	47.45	50.00	23.72
SMA.058686	0	Sewer 150 <1.5m deep: Nodes R1i/7 - R1i/6	47.45	50.00	23.72
SMA.058687	0	Sewer 150 <1.5m deep: Nodes R1i/8 - R1i/7	47.45	50.00	23.72
SMA.058691	0	Sewer 150 <1.5m deep: Nodes R1j/2 - R1j/1	47.45	50.00	23.72
SMA.061455	0	Sewer 150 >=1.5m deep: Nodes R1a1/1 - R1a1/1a	47.45	50.00	23.72
SMA.076238	0	Sewer 150 >=1.5m deep: Nodes R1a/9a - R1a/9	47.45	50.00	23.72
SMA.076245	0	Sewer 150 <1.5m deep: Nodes R1h/1a - R1h/1	47.45	50.00	23.72
SMA.076258	0	Sewer 150 >=1.5m deep: Nodes R1d/3a - R1d/3	47.45	50.00	23.72
CIV.001341	Kinbombi Creek Weir	Spillway / Embankment	47.20	50.00	23.60
CIV.001391	Wine Glass HL Reservoir	Pipework	46.96	50.00	23.48
CIV.001468	Rainbow Beach Bore TWS1	Bore Structure	46.93	50.00	23.47
CIV.001343	Kinbombi Creek Weir	Walkway	31.29	75.00	23.47
ELE.001636	Rainbow Beach Bore TWS1	Switchboard	46.75	50.00	23.37
WHV.002690	0	Valve Air	31.11	75.00	23.33
WHV.002694	0	Valve Air	31.11	75.00	23.33
WHV.002698	0	Valve Air	31.11	75.00	23.33
CSY.011822	Gympie Sewerage Treatment Plant	10 Chlorine Disinfection - Instrumentation	46.46	50.00	23.23
WPE.001727	Jones Hill WTP	10 Sludge Dewatering - Clarifier, mech	45.62	50.00	22.81
CIV.001324	Jones Hill WTP	11 Chemical Dosing - Bunding	45.52	50.00	22.76
CIV.000987	Gympie Sewerage Treatment Plant	04 Bioreactor - Bunding	45.13	50.00	22.56
WMA.009236	0	Water 150 AC: Nodes 95 - 55	44.83	50.00	22.42
WHV.002695	0	Valve Air	29.79	75.00	22.35
WHV.002696	0	Valve Air	29.79	75.00	22.35
WHV.002697	0	Valve Air	29.79	75.00	22.35
WMA.008787	0	Water 100 AC: Nodes 55 - 105	44.22	50.00	22.11
ELE.001515	Gympie Sewerage Treatment Plant	12 Siteworks - Switchboard	88.40	25.00	22.10
ELE.001516	Gympie Sewerage Treatment Plant	12 Siteworks - Wiring	88.40	25.00	22.10
CIV.001342	Kinbombi Creek Weir	Inlet Tower	43.81	50.00	21.91
WHV.002705	0	Valve Scour	28.79	75.00	21.59
WHV.002710	0	Valve Scour	28.79	75.00	21.59
WHV.002712	0	Valve Scour	28.79	75.00	21.59
WHV.002714	0	Valve Scour	28.79	75.00	21.59
WHV.002716	0	Valve Scour	28.79	75.00	21.59
WHV.002717	0	Valve Scour	28.79	75.00	21.59
WPU.001697	Rainbow Beach Booster Station	Pump Booster 2	43.08	50.00	21.54
WPU.001698	Rainbow Beach Booster Station	Pump Booster 1	43.08	50.00	21.54
WPU.001663	Jones Hill WTP	12 Siteworks - Pump Mono CR25	43.03	50.00	21.51
CIV.001392	Wine Glass HL Reservoir	Valves	42.74	50.00	21.37
WMA.009239	0	Water 150 AC: Nodes 53 - 52	42.73	50.00	21.36
WMA.009325	0	Water 150 AC: Nodes 8 - 7	42.73	50.00	21.36
WMA.009327	0	Water 150 AC: Nodes TB - RW	42.73	50.00	21.36
WMR.M0010447	0	Water Meter - 32mm	28.40	75.00	21.30
WMR.M42256	0	Water Meter - 20mm	28.40	75.00	21.30
WMR.M07004091	0	Water Meter - 32mm	28.40	75.00	21.30
SVC.M345718	0	Sewerage House Connection Branch - 100 mm	42.49	50.00	21.25
SPE.048124	Gympie Sewerage Treatment Plant	05 Clarification - Clarifier Bridge	42.34	50.00	21.17
SPE.048129	Gympie Sewerage Treatment Plant	05 Clarification - Clarifier Bridge	42.34	50.00	21.17
SVC.M900026	0	Sewerage House Connection Branch - 100 mm	41.93	50.00	20.96
WPE.001721	Jones Hill WTP	02 Raw Water PS - Crane	41.83	50.00	20.92
CIV.001472	Rainbow Beach Bore TWS1	Pipework	41.81	50.00	20.90
WMA.008930	0	Water 100 AC: Nodes 50 - 51	41.47	50.00	20.74

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
CIV.001321	Jones Hill WTP	09 Backwash System - Tank Backwash 1	41.30	50.00	20.65
WHV.002700	0	Valve Scour	27.48	75.00	20.61
WHV.002708	0	Valve Scour	27.48	75.00	20.61
WHV.002711	0	Valve Scour	27.48	75.00	20.61
WHV.002713	0	Valve Scour	27.48	75.00	20.61
WHV.002715	0	Valve Scour	27.48	75.00	20.61
WMA.009251	0	Water 150 AC: Nodes 54 - 53	41.11	50.00	20.55
WMA.008808	0	Water 100 AC: Nodes 65 - 66	40.98	50.00	20.49
WMA.009057	0	Water 100 AC: Nodes 59 - 57	40.98	50.00	20.49
WPU.001664	Jones Hill WTP	12 Siteworks - Pump Siteworks	40.92	50.00	20.46
WPU.001704	Rainbow Beach Bore TWS1	Pump Bore	40.90	50.00	20.45
BLD.00394	Rainbow Beach Booster Station	Rainbow Beach Booster Station	40.75	50.00	20.37
WMA.009253	0	Water 150 AC: Nodes 52 - 94	40.62	50.00	20.31
WMA.009258	0	Water 150 AC: Nodes 51 - 1	40.62	50.00	20.31
WMA.009324	0	Water 150 AC: Nodes 56 - 54	40.62	50.00	20.31
WMA.009328	0	Water 150 AC: Nodes 58 - 57	40.62	50.00	20.31
WMA.009329	0	Water 150 AC: Nodes 57 - 53	40.62	50.00	20.31
WPE.001730	Jones Hill WTP	11 Chemical Dosing - Ancilliary	40.18	50.00	20.09
WHV.005745	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005759	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005794	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005795	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005818	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005825	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005833	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005840	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005841	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005842	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005843	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005844	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005845	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005846	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005848	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005849	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005850	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005860	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005868	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005870	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005873	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005980	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005981	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005984	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005985	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005986	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005987	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005988	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005989	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005990	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005991	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005992	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005994	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005995	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005996	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005998	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.005999	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.006009	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.006010	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.006021	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.006035	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.006036	0	Valve Sluice 080-150	26.74	75.00	20.05

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WHV.006042	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.006048	0	Valve Sluice 080-150	26.74	75.00	20.05
WHV.006051	0	Valve Sluice 080-150	26.74	75.00	20.05
SMA.062488	0	Sewer RM 225: Nodes PS-R1 Junction 1 - STP-RB	79.45	25.00	19.86
WPU.001656	Jones Hill WTP	10 Sludge Dewatering - Pump Dewatering	39.61	50.00	19.80
WPU.001657	Jones Hill WTP	10 Sludge Dewatering - Pump Filtrate 2	39.61	50.00	19.80
WPU.001658	Jones Hill WTP	10 Sludge Dewatering - Pump Filtrate 1	39.61	50.00	19.80
WPU.001659	Jones Hill WTP	10 Sludge Dewatering - Pump Dewatering	39.61	50.00	19.80
CIV.001013	Gympie Sewerage Treatment Plant	12 Siteworks - Stormwater	39.56	50.00	19.78
WMA.008829	0	Water 100 AC: Nodes 30 - 28	39.36	50.00	19.68
SPE.048135	Gympie Sewerage Treatment Plant	08 Aerobic Digester - Mechanical	78.35	25.00	19.59
SPE.048138	Gympie Sewerage Treatment Plant	09b Filtration - Belt Press	78.35	25.00	19.59
WPU.001662	Jones Hill WTP	12 Siteworks - Pump Sampling	39.01	50.00	19.51
WMA.008799	0	Water 100 AC: Nodes 63 - 66	38.88	50.00	19.44
WMA.008803	0	Water 100 AC: Nodes 63 - 59	38.88	50.00	19.44
WMA.008804	0	Water 100 AC: Nodes 7 - 6	38.88	50.00	19.44
WMA.008805	0	Water 100 AC: Nodes 65 - 100	38.88	50.00	19.44
WMA.008820	0	Water 100 AC: Nodes 64 - 63	38.88	50.00	19.44
WMA.008822	0	Water 100 AC: Nodes 64 - 61	38.88	50.00	19.44
WMA.008834	0	Water 100 AC: Nodes 61 - 106	38.88	50.00	19.44
WMA.008835	0	Water 100 AC: Nodes 60 - 59	38.88	50.00	19.44
WMA.008852	0	Water 100 AC: Nodes 66 - 58	38.88	50.00	19.44
WMA.008870	0	Water 100 AC: Nodes 99 - 28	38.88	50.00	19.44
WMA.008938	0	Water 100 AC: Nodes 29 - 28	38.88	50.00	19.44
WMA.008943	0	Water 100 AC: Nodes 52 - 50	38.88	50.00	19.44
WMA.008944	0	Water 100 AC: Nodes 27 - 93	38.88	50.00	19.44
WMA.009054	0	Water 100 AC: Nodes 25 - 101	38.88	50.00	19.44
WMA.009080	0	Water 100 AC: Nodes 60 - 52	38.88	50.00	19.44
WMA.009081	0	Water 100 AC: Nodes 27 - 25	38.88	50.00	19.44
WPE.001729	Jones Hill WTP	10 Sludge Dewatering - Mixer	38.81	50.00	19.41
WPU.001655	Jones Hill WTP	10 Sludge Dewatering - Pump Dosing	38.81	50.00	19.41
WPE.001728	Jones Hill WTP	10 Sludge Dewatering - Mixer	38.81	50.00	19.41
WMA.009237	0	Water 150 AC: Nodes 95 - 54	38.51	50.00	19.26
WMA.009256	0	Water 150 AC: Nodes 101 - 7	38.51	50.00	19.26
WMA.009257	0	Water 150 AC: Nodes 51 - 94	38.51	50.00	19.26
SPE.048152	Gympie Sewerage Pump Station G1	Ventilation	38.45	50.00	19.23
CSY.012037	Rainbow Beach Booster Station	Telemetry	38.38	50.00	19.19
WPE.001748	Jones Hill WTP	12 Siteworks - Compressor	38.19	50.00	19.10
CIV.000989	Gympie Sewerage Treatment Plant	04 Bioreactor - Coating	38.07	50.00	19.04
CIV.000993	Gympie Sewerage Treatment Plant	05 Clarification - Coating	38.07	50.00	19.04
SPE.048133	Gympie Sewerage Treatment Plant	08 Aerobic Digester - Diffuser Racks	75.86	25.00	18.97
SPE.048136	Gympie Sewerage Treatment Plant	08 Aerobic Digester - Mixers	75.86	25.00	18.97
SPE.048137	Gympie Sewerage Treatment Plant	09a Filtration - Polyblend Unit	75.86	25.00	18.97
SPE.048139	Gympie Sewerage Treatment Plant	09b Filtration - Conveyers	75.86	25.00	18.97
CIV.000999	Gympie Sewerage Treatment Plant	08 Aerobic Digester - Pipework	75.56	25.00	18.89
WPE.001742	Jones Hill WTP	12 Siteworks - Crane Gantry	37.59	50.00	18.80
CSY.011835	Gympie Sewerage Pump Station G1	Instrumentation	37.52	50.00	18.76
CSY.011836	Gympie Sewerage Pump Station G1	Telemetry	37.52	50.00	18.76
SPE.048116	Gympie Sewerage Treatment Plant	02a Bioreactor Feed PS - Gantry Crane	37.37	50.00	18.68
WMA.008851	0	Water 100 AC: Nodes 67 - 65	37.26	50.00	18.63
WMA.008791	0	Water 100 AC: Nodes 102 - 50	36.77	50.00	18.38
WMA.008929	0	Water 100 AC: Nodes 100 - 64	36.77	50.00	18.38
WMA.008945	0	Water 100 AC: Nodes 10 - 11	36.77	50.00	18.38
WMA.008953	0	Water 100 AC: Nodes 62 - 61	36.77	50.00	18.38
WMA.009082	0	Water 100 AC: Nodes 26 - 25	36.77	50.00	18.38
WMA.009083	0	Water 100 AC: Nodes 60 - 106	36.77	50.00	18.38
SPU.047948	Gympie Sewerage Treatment Plant	09a Filtration - Pump Polymer Dosing	73.38	25.00	18.34
SMA.062447	0	Sewer RM 100: Nodes PS-R2 - PS-R1	73.24	25.00	18.31
CIV.001010	Gympie Sewerage Treatment Plant	12 Siteworks - Road Pavement	36.60	50.00	18.30
CSY.012015	Wine Glass HL Reservoir	Telemetry	36.33	50.00	18.16

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WPE.001740	Jones Hill WTP	12 Siteworks - Crane	35.49	50.00	17.74
WPE.001741	Jones Hill WTP	12 Siteworks - Crane	35.49	50.00	17.74
WPE.001743	Jones Hill WTP	12 Siteworks - Crane	35.49	50.00	17.74
WPE.001744	Jones Hill WTP	12 Siteworks - Crane	35.49	50.00	17.74
WPE.001745	Jones Hill WTP	12 Siteworks - Crane	35.49	50.00	17.74
SPE.048134	Gympie Sewerage Treatment Plant	08 Aerobic Digester - Diffusers	70.89	25.00	17.72
SMA.062448	0	Sewer RM 100: Nodes PS-R3 - R2a/2	70.75	25.00	17.69
CIV.001001	Gympie Sewerage Treatment Plant	09a Filtration - Pipework	70.59	25.00	17.65
SMA.062072	0	Sewer 225 <1.5m deep: Nodes R2/13 - R2/12	70.56	25.00	17.64
SMA.062074	0	Sewer 225 <1.5m deep: Nodes R2/15 - R2/14	70.56	25.00	17.64
SMA.062075	0	Sewer 225 <1.5m deep: Nodes R2/16 - R2/15	70.56	25.00	17.64
CIV.001012	Gympie Sewerage Treatment Plant	12 Siteworks - Earthworks	35.17	50.00	17.59
WMS.M1456177	0	Water Service - 100mm	34.31	50.00	17.15
WMS.0000M839	0	Water Service - 100mm	34.31	50.00	17.15
SMA.062070	0	Sewer 225 <1.5m deep: Nodes R2/11 - R2/10	68.07	25.00	17.02
SMA.062071	0	Sewer 225 <1.5m deep: Nodes R2/12 - R2/11	68.07	25.00	17.02
SMA.062073	0	Sewer 225 <1.5m deep: Nodes R2/14 - R2/13	68.07	25.00	17.02
SMA.062076	0	Sewer 225 <1.5m deep: Nodes R2i/1 - R2/16	68.07	25.00	17.02
CIV.000988	Gympie Sewerage Treatment Plant	04 Bioreactor - Tank	67.54	25.00	16.89
WMA.009485	0	Water 300 DI: Nodes 68 - 40	66.89	25.00	16.72
CIV.001006	Gympie Sewerage Treatment Plant	10 Service Water PS - Structure	33.10	50.00	16.55
WHV.001807	0	Fire Hydrant	22.06	75.00	16.55
WHV.001808	0	Fire Hydrant	22.06	75.00	16.55
WHV.001810	0	Fire Hydrant	22.06	75.00	16.55
WHV.001811	0	Fire Hydrant	22.06	75.00	16.55
WHV.001812	0	Fire Hydrant	22.06	75.00	16.55
WHV.001813	0	Fire Hydrant	22.06	75.00	16.55
WHV.001814	0	Fire Hydrant	22.06	75.00	16.55
WHV.001815	0	Fire Hydrant	22.06	75.00	16.55
WHV.001816	0	Fire Hydrant	22.06	75.00	16.55
WHV.001818	0	Fire Hydrant	22.06	75.00	16.55
WHV.001819	0	Fire Hydrant	22.06	75.00	16.55
WHV.001820	0	Fire Hydrant	22.06	75.00	16.55
WHV.001822	0	Fire Hydrant	22.06	75.00	16.55
WHV.001823	0	Fire Hydrant	22.06	75.00	16.55
WHV.001824	0	Fire Hydrant	22.06	75.00	16.55
WHV.001825	0	Fire Hydrant	22.06	75.00	16.55
WHV.001826	0	Fire Hydrant	22.06	75.00	16.55
WHV.001837	0	Fire Hydrant	22.06	75.00	16.55
WHV.001843	0	Fire Hydrant	22.06	75.00	16.55
WHV.001846	0	Fire Hydrant	22.06	75.00	16.55
WHV.001848	0	Fire Hydrant	22.06	75.00	16.55
WHV.002018	0	Fire Hydrant	22.06	75.00	16.55
WHV.002019	0	Fire Hydrant	22.06	75.00	16.55
WHV.002021	0	Fire Hydrant	22.06	75.00	16.55
WHV.002022	0	Fire Hydrant	22.06	75.00	16.55
WHV.002023	0	Fire Hydrant	22.06	75.00	16.55
WHV.002024	0	Fire Hydrant	22.06	75.00	16.55
WHV.002026	0	Fire Hydrant	22.06	75.00	16.55
WHV.002027	0	Fire Hydrant	22.06	75.00	16.55
WHV.002028	0	Fire Hydrant	22.06	75.00	16.55
WHV.002034	0	Fire Hydrant	22.06	75.00	16.55
WHV.002035	0	Fire Hydrant	22.06	75.00	16.55
WHV.002036	0	Fire Hydrant	22.06	75.00	16.55
WHV.002037	0	Fire Hydrant	22.06	75.00	16.55
WHV.002040	0	Fire Hydrant	22.06	75.00	16.55
WHV.002041	0	Fire Hydrant	22.06	75.00	16.55
WHV.002042	0	Fire Hydrant	22.06	75.00	16.55
WHV.002043	0	Fire Hydrant	22.06	75.00	16.55
WHV.002044	0	Fire Hydrant	22.06	75.00	16.55

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WHV.002045	0	Fire Hydrant	22.06	75.00	16.55
WHV.002046	0	Fire Hydrant	22.06	75.00	16.55
WHV.002047	0	Fire Hydrant	22.06	75.00	16.55
WHV.002048	0	Fire Hydrant	22.06	75.00	16.55
WHV.002049	0	Fire Hydrant	22.06	75.00	16.55
WHV.002050	0	Fire Hydrant	22.06	75.00	16.55
WHV.002051	0	Fire Hydrant	22.06	75.00	16.55
WHV.002053	0	Fire Hydrant	22.06	75.00	16.55
WHV.002091	0	Fire Hydrant	22.06	75.00	16.55
WHV.002107	0	Fire Hydrant	22.06	75.00	16.55
WHV.002108	0	Fire Hydrant	22.06	75.00	16.55
WHV.002109	0	Fire Hydrant	22.06	75.00	16.55
WHV.002111	0	Fire Hydrant	22.06	75.00	16.55
WHV.002485	0	Fire Hydrant	22.06	75.00	16.55
WHV.002653	0	Fire Hydrant	22.06	75.00	16.55
CIV.001011	Gympie Sewerage Treatment Plant	12 Siteworks - Road Seal	32.69	50.00	16.34
CSY.012043	Rainbow Beach Bore TWS1	Telemetry	32.67	50.00	16.33
WMR.M1456177	0	Water Meter - 100mm	32.20	50.00	16.10
WMR.0000M839	0	Water Meter - 100mm	32.20	50.00	16.10
CIV.001328	Jones Hill WTP	12 Siteworks - Earthworks	31.87	50.00	15.93
SMA.058695	0	Sewer 150 <1.5m deep: Nodes R2/1 - PS-R2	63.40	25.00	15.85
SMA.058696	0	Sewer 150 <1.5m deep: Nodes R2/10 - R2/9	63.40	25.00	15.85
SMA.058698	0	Sewer 150 <1.5m deep: Nodes R2/18 - R2/17	63.40	25.00	15.85
SMA.058700	0	Sewer 150 <1.5m deep: Nodes R2/2 - R2/1	63.40	25.00	15.85
SMA.058701	0	Sewer 150 <1.5m deep: Nodes R2/20 - R2/19	63.40	25.00	15.85
SMA.058704	0	Sewer 150 <1.5m deep: Nodes R2/3 - R2/2	63.40	25.00	15.85
SMA.058705	0	Sewer 150 <1.5m deep: Nodes R2/3 - R2/2a	63.40	25.00	15.85
SMA.058706	0	Sewer 150 <1.5m deep: Nodes R2/4 - R2/3	63.40	25.00	15.85
SMA.058707	0	Sewer 150 <1.5m deep: Nodes R2/5 - R2/4	63.40	25.00	15.85
SMA.058708	0	Sewer 150 <1.5m deep: Nodes R2/6 - R2/5	63.40	25.00	15.85
SMA.058783	0	Sewer 150 <1.5m deep: Nodes R3/2 - R3/1	63.40	25.00	15.85
SMA.058784	0	Sewer 150 <1.5m deep: Nodes R3/3 - R3/2	63.40	25.00	15.85
SMA.058789	0	Sewer 150 <1.5m deep: Nodes R3/9 - R3/8	63.40	25.00	15.85
ELE.001517	Gympie Sewerage Treatment Plant	12 Siteworks - Variable Speed Drive	62.40	25.00	15.60
WPE.001733	Jones Hill WTP	11 Chemical Dosing - Compressor	62.23	25.00	15.56
WMR.G1000123	0	Water Meter - 40mm	30.66	50.00	15.33
WMR.G1000127	0	Water Meter - 50mm	30.66	50.00	15.33
SMA.058496	0	Sewer LongLife 100-375 <1.5m: Nodes R1/19 - R1/18	60.92	25.00	15.23
SMA.058697	0	Sewer 150 <1.5m deep: Nodes R2/17 - R2/16	60.92	25.00	15.23
SMA.058699	0	Sewer 150 <1.5m deep: Nodes R2/19 - R2/18	60.92	25.00	15.23
SMA.058702	0	Sewer 150 <1.5m deep: Nodes R2/21 - R2/20	60.92	25.00	15.23
SMA.058703	0	Sewer 150 <1.5m deep: Nodes R2/2a - R2/2	60.92	25.00	15.23
SMA.058709	0	Sewer 150 <1.5m deep: Nodes R2/7 - R2/6	60.92	25.00	15.23
SMA.058710	0	Sewer 150 <1.5m deep: Nodes R2/8 - R2/7	60.92	25.00	15.23
SMA.058711	0	Sewer 150 <1.5m deep: Nodes R2/9 - R2/8	60.92	25.00	15.23
SMA.058781	0	Sewer 150 <1.5m deep: Nodes R3/4 - R3/3	60.92	25.00	15.23
SMA.058782	0	Sewer 150 <1.5m deep: Nodes R3/1 - PS-R3	60.92	25.00	15.23
SMA.058785	0	Sewer 150 <1.5m deep: Nodes R3/5 - R3/4	60.92	25.00	15.23
SMA.058786	0	Sewer 150 <1.5m deep: Nodes R3/6 - R3/5	60.92	25.00	15.23
SMA.058787	0	Sewer 150 <1.5m deep: Nodes R3/7 - R3/6	60.92	25.00	15.23
SMA.058788	0	Sewer 150 <1.5m deep: Nodes R3/8 - R3/7	60.92	25.00	15.23
SMA.058790	0	Sewer 150 <1.5m deep: Nodes R3a/1 - R3/1	60.92	25.00	15.23
SMA.058799	0	Sewer 150 <1.5m deep: Nodes R5/3 - R5/2	60.92	25.00	15.23
SMA.061460	0	Sewer 150 >=1.5m deep: Nodes R4/4a - R4/5:R4/4	60.92	25.00	15.23
SMA.061463	0	Sewer 150 >=1.5m deep: Nodes R4/6a - R4/6	60.92	25.00	15.23
SMA.061465	0	Sewer 150 >=1.5m deep: Nodes R4/8 - R4/7	60.92	25.00	15.23
CIV.000970	Gympie Sewerage Treatment Plant	01 Inlet works - Coating	30.31	50.00	15.16
WMA.009482	0	Water 300 DI: Nodes 40 - 103	60.57	25.00	15.14
WMA.009484	0	Water 300 DI: Nodes 69 - 68	60.57	25.00	15.14
WMA.009487	0	Water 300 DI: Nodes 41 - 40	60.57	25.00	15.14

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
CIV.001317	Jones Hill WTP	09 Backwash System - Backwash Tank	30.28	50.00	15.14
CIV.001320	Jones Hill WTP	09 Backwash System - Tank Backwash 2	30.28	50.00	15.14
CIV.000978	Gympie Sewerage Treatment Plant	02 Flow Balance - Coating	28.92	50.00	14.46
CIV.000980	Gympie Sewerage Treatment Plant	02 Flow Balance - Coating	28.92	50.00	14.46
CIV.000982	Gympie Sewerage Treatment Plant	02 Flow Balance - Coating	28.92	50.00	14.46
SMH.052683	0	Sewer MH <1.5m deep: Node R1a/24	57.65	25.00	14.41
SMH.052684	0	Sewer MH <1.5m deep: Node R1a/20	57.65	25.00	14.41
SMH.052686	0	Sewer MH <1.5m deep: Node R1a/23	57.65	25.00	14.41
SMH.052688	0	Sewer MH <1.5m deep: Node R1a/22	57.65	25.00	14.41
SMH.052701	0	Sewer MH <1.5m deep: Node R1a1/16	57.65	25.00	14.41
SMH.052702	0	Sewer MH <1.5m deep: Node R1a1/12	57.65	25.00	14.41
WMR.G1002095	0	Water Meter - 25mm	28.40	50.00	14.20
WMR.G1000108	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1002214	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1102108	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1102057	0	Water Meter - 25mm	28.40	50.00	14.20
WMR.G1000107	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1101930	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1003376	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1101934	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1101949	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1101943	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1102119	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1101925	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1201166	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1102131	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1003429	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1003423	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1000115	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1102142	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1003200	0	Water Meter - 25mm	28.40	50.00	14.20
WMR.G1001660	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1002091	0	Water Meter - 25mm	28.40	50.00	14.20
WMR.G1000132	0	Water Meter - 80mm	28.40	50.00	14.20
WMR.G1002240	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1101969	0	Water Meter - 32mm	28.40	50.00	14.20
WMR.G1001638	0	Water Meter - 20mm	28.40	50.00	14.20
WMR.G1001598	0	Water Meter - 20mm	28.40	50.00	14.20
SMH.052840	0	Sewer MH <1.5m deep: Node R2/11	56.42	25.00	14.11
SMH.052844	0	Sewer MH <1.5m deep: Node R2/15	56.42	25.00	14.11
SMH.052845	0	Sewer MH <1.5m deep: Node R2/16	56.42	25.00	14.11
SMH.052848	0	Sewer MH <1.5m deep: Node R2/19	56.42	25.00	14.11
SMH.052850	0	Sewer MH <1.5m deep: Node R2/20	56.42	25.00	14.11
SMH.052851	0	Sewer MH <1.5m deep: Node R2/21	56.42	25.00	14.11
SMH.052854	0	Sewer MH <1.5m deep: Node R2/4	56.42	25.00	14.11
SMH.052857	0	Sewer MH <1.5m deep: Node R2/7	56.42	25.00	14.11
SMH.052929	0	Sewer MH <1.5m deep: Node R3/1	56.42	25.00	14.11
SMH.052930	0	Sewer MH <1.5m deep: Node R3/2	56.42	25.00	14.11
SMH.052931	0	Sewer MH <1.5m deep: Node R3/3	56.42	25.00	14.11
SMH.052933	0	Sewer MH <1.5m deep: Node R3/5	56.42	25.00	14.11
SMH.052936	0	Sewer MH <1.5m deep: Node R3/8	56.42	25.00	14.11
SMH.052937	0	Sewer MH <1.5m deep: Node R3/9	56.42	25.00	14.11
SMH.052940	0	Sewer MH <1.5m deep: Node R3a/3	56.42	25.00	14.11
SMH.052941	0	Sewer MH <1.5m deep: Node R3a/4	56.42	25.00	14.11
SMH.052944	0	Sewer MH <1.5m deep: Node R3b/3	56.42	25.00	14.11
WMA.009414	0	Water 225 DI: Nodes 153 - 157	55.96	25.00	13.99
ELE.001512	Gympie Sewerage Treatment Plant	09a Filtration - Switchboard	54.94	25.00	13.73
ELE.001513	Gympie Sewerage Treatment Plant	09b Filtration - Switchboard	54.94	25.00	13.73
BLD.00381	Gympie Sewerage Treatment Plant	12 Siteworks - Gympie STP - Workshop	54.22	25.00	13.56
WMA.009416	0	Water 225 DI: Nodes 73 - 154	53.86	25.00	13.46

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMA.009419	0	Water 225 DI: Nodes 70 - 68	53.86	25.00	13.46
WMA.009421	0	Water 225 DI: Nodes 71 - 70	53.86	25.00	13.46
WMA.009422	0	Water 225 DI: Nodes 91 - 77	53.86	25.00	13.46
WMA.009423	0	Water 225 DI: Nodes 73 - 72	53.86	25.00	13.46
CIV.001451	Rainbow Beach Booster Station	Pipework	53.58	25.00	13.39
WHV.005756	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005807	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005815	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005816	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005817	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005819	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005821	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005822	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005823	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005824	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005827	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005828	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005829	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005832	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005834	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005852	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005853	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005854	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005855	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005856	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005858	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005859	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005861	0	Valve Sluice 080-150	26.74	50.00	13.37
WHV.005983	0	Valve Sluice 080-150	26.74	50.00	13.37
SMH.052725	0	Sewer MH <1.5m deep: Node R1a1b/2	52.89	25.00	13.22
SMH.052764	0	Sewer MH <1.5m deep: Node R1a5/1	52.89	25.00	13.22
SMH.052765	0	Sewer MH <1.5m deep: Node R1a5/2	52.89	25.00	13.22
SMH.052860	0	Sewer MH <1.5m deep: Node R2a/1	52.89	25.00	13.22
SMH.052862	0	Sewer MH <1.5m deep: Node R2b/1	52.89	25.00	13.22
SMH.052863	0	Sewer MH <1.5m deep: Node R2b/2	52.89	25.00	13.22
SMH.052864	0	Sewer MH <1.5m deep: Node R2c/1	52.89	25.00	13.22
SMH.052868	0	Sewer MH <1.5m deep: Node R2c/5	52.89	25.00	13.22
SMH.052871	0	Sewer MH <1.5m deep: Node R2d/3	52.89	25.00	13.22
SMH.052875	0	Sewer MH <1.5m deep: Node R2e/2	52.89	25.00	13.22
SMH.052878	0	Sewer MH <1.5m deep: Node R2e/6	52.89	25.00	13.22
SMH.052879	0	Sewer MH <1.5m deep: Node R2e/7	52.89	25.00	13.22
SMH.052880	0	Sewer MH <1.5m deep: Node R2e/8	52.89	25.00	13.22
SMH.052883	0	Sewer MH <1.5m deep: Node R2f/2	52.89	25.00	13.22
SMH.052885	0	Sewer MH <1.5m deep: Node R2f/4	52.89	25.00	13.22
SMH.052887	0	Sewer MH <1.5m deep: Node R2f/6	52.89	25.00	13.22
SMH.052896	0	Sewer MH <1.5m deep: Node R2g/4	52.89	25.00	13.22
SMH.052901	0	Sewer MH <1.5m deep: Node R2g/9	52.89	25.00	13.22
SMH.052903	0	Sewer MH <1.5m deep: Node R2h/1	52.89	25.00	13.22
SMH.052908	0	Sewer MH <1.5m deep: Node R2h/6	52.89	25.00	13.22
SMH.052913	0	Sewer MH <1.5m deep: Node R2h1/3	52.89	25.00	13.22
SMH.052914	0	Sewer MH <1.5m deep: Node R2h1/2	52.89	25.00	13.22
SMH.052915	0	Sewer MH <1.5m deep: Node R2h1/1	52.89	25.00	13.22
SMH.052917	0	Sewer MH <1.5m deep: Node R2i/1	52.89	25.00	13.22
SMH.052918	0	Sewer MH <1.5m deep: Node R2i/2	52.89	25.00	13.22
SMH.052919	0	Sewer MH <1.5m deep: Node R2i/3	52.89	25.00	13.22
SMH.052922	0	Sewer MH <1.5m deep: Node R2i/6	52.89	25.00	13.22
SMH.052923	0	Sewer MH <1.5m deep: Node R2j/1	52.89	25.00	13.22
SMH.052928	0	Sewer MH <1.5m deep: Node Re2/3	52.89	25.00	13.22
SMH.052946	0	Sewer MH <1.5m deep: Node R4c1/1	52.89	25.00	13.22
SMH.052947	0	Sewer MH <1.5m deep: Node R4c2/1	52.89	25.00	13.22

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SMH.052948	0	Sewer MH <1.5m deep: Node R4c3/1	52.89	25.00	13.22
SMH.052949	0	Sewer MH <1.5m deep: Node R4c4/1	52.89	25.00	13.22
SMH.055047	0	Sewer MH >=1.5m deep: Node R4/2	52.89	25.00	13.22
SMH.055049	0	Sewer MH >=1.5m deep: Node R4/3a	52.89	25.00	13.22
SMH.055051	0	Sewer MH >=1.5m deep: Node R4/4a	52.89	25.00	13.22
SMH.055052	0	Sewer MH >=1.5m deep: Node R4/4b	52.89	25.00	13.22
SMH.055054	0	Sewer MH >=1.5m deep: Node R4/5a	52.89	25.00	13.22
SMH.055055	0	Sewer MH >=1.5m deep: Node R4/6	52.89	25.00	13.22
SMH.055056	0	Sewer MH >=1.5m deep: Node R4/6a	52.89	25.00	13.22
SMH.055057	0	Sewer MH >=1.5m deep: Node R4/6b	52.89	25.00	13.22
SMH.055059	0	Sewer MH >=1.5m deep: Node R4/7a	52.89	25.00	13.22
SMH.055061	0	Sewer MH >=1.5m deep: Node R4a/1	52.89	25.00	13.22
SMH.055073	0	Sewer MH >=1.5m deep: Node R4c/1	52.89	25.00	13.22
SMH.055074	0	Sewer MH >=1.5m deep: Node R4c/2	52.89	25.00	13.22
SMH.055075	0	Sewer MH >=1.5m deep: Node R4c/3	52.89	25.00	13.22
SMH.055076	0	Sewer MH >=1.5m deep: Node R4c/4	52.89	25.00	13.22
SMH.055077	0	Sewer MH >=1.5m deep: Node R4c/5	52.89	25.00	13.22
SMH.055078	0	Sewer MH >=1.5m deep: Node R4c/6	52.89	25.00	13.22
WMA.009415	0	Water 225 DI: Nodes 77 - 76	51.75	25.00	12.94
WMA.009417	0	Water 225 DI: Nodes 72 - 71	51.75	25.00	12.94
WMA.009418	0	Water 225 DI: Nodes 153 - 154	51.75	25.00	12.94
WMA.009420	0	Water 225 DI: Nodes 76 - 70	51.75	25.00	12.94
CSY.011825	Gympie Sewerage Treatment Plant	12 Siteworks - PLC	51.43	25.00	12.86
CSY.011826	Gympie Sewerage Treatment Plant	12 Siteworks - Instrumentation	51.43	25.00	12.86
SMA.058714	0	Sewer 150 <1.5m deep: Nodes R2b/1 - R2/6	51.17	25.00	12.79
WPE.001738	Jones Hill WTP	11 Chemical Dosing - Scales	25.32	50.00	12.66
SMA.056793	0	Sewer 150 <1.5m deep: Nodes G2f/1 - G2/12	49.93	25.00	12.48
SMA.058536	0	Sewer 150 <1.5m deep: Nodes R1a/22 - R1a/21	49.93	25.00	12.48
SMA.058537	0	Sewer 150 <1.5m deep: Nodes R1a/23 - R1a/22	49.93	25.00	12.48
SMA.058538	0	Sewer 150 <1.5m deep: Nodes R1a/24 - R1a/23	49.93	25.00	12.48
SMA.058546	0	Sewer LongLife 100-375 <1.5m: Nodes R1a/8 - R1a/7	49.93	25.00	12.48
SMA.058550	0	Sewer 150 <1.5m deep: Nodes R1a1/12 - R1a1/11	49.93	25.00	12.48
SMA.058553	0	Sewer 150 <1.5m deep: Nodes R1a1/15 - R1a1/14	49.93	25.00	12.48
SMA.058554	0	Sewer 150 <1.5m deep: Nodes R1a1/16 - R1a1/15	49.93	25.00	12.48
SMA.058558	0	Sewer 150 <1.5m deep: Nodes R1a1/41 - R1a1/10	49.93	25.00	12.48
SMA.058562	0	Sewer 150 <1.5m deep: Nodes R1a1/6 - R1a1/5	49.93	25.00	12.48
SMA.058586	0	Sewer 150 <1.5m deep: Nodes R1a1b1/1 - R1a1b/2	49.93	25.00	12.48
SMA.058623	0	Sewer 150 <1.5m deep: Nodes R1a5/1 - R1a/19	49.93	25.00	12.48
SMA.058624	0	Sewer 150 <1.5m deep: Nodes R1a5/2 - R1a5/1	49.93	25.00	12.48
SMA.058626	0	Sewer 150 <1.5m deep: Nodes R1a6/1 - R1a/21	49.93	25.00	12.48
SMA.058627	0	Sewer 150 <1.5m deep: Nodes R1a6/2 - R1a6/1	49.93	25.00	12.48
SMA.058675	0	Sewer 150 <1.5m deep: Nodes R1h/4 - R1h/3	49.93	25.00	12.48
SMA.058693	0	Sewer 150 <1.5m deep: Nodes R1l/1 - R1/29	49.93	25.00	12.48
SMA.058716	0	Sewer 150 <1.5m deep: Nodes R2c/1 - R2/8	49.93	25.00	12.48
SMA.058717	0	Sewer 150 <1.5m deep: Nodes R2c/2 - R2c/1	49.93	25.00	12.48
SMA.058718	0	Sewer 150 <1.5m deep: Nodes R2c/3 - R2c/2	49.93	25.00	12.48
SMA.058719	0	Sewer 150 <1.5m deep: Nodes R2c/4 - R2c/3	49.93	25.00	12.48
SMA.058720	0	Sewer 150 <1.5m deep: Nodes R2c/5 - R2c/4	49.93	25.00	12.48
SMA.058721	0	Sewer 150 <1.5m deep: Nodes R2d/1 - R2/9	49.93	25.00	12.48
SMA.058722	0	Sewer 150 <1.5m deep: Nodes R2d/2 - Rd2/1	49.93	25.00	12.48
SMA.058723	0	Sewer 150 <1.5m deep: Nodes R2d/3 - R2d/2	49.93	25.00	12.48
SMA.058724	0	Sewer 150 <1.5m deep: Nodes R2d/4 - R2d/3	49.93	25.00	12.48
SMA.058725	0	Sewer 150 <1.5m deep: Nodes R2d/5 - R2d/4	49.93	25.00	12.48
SMA.058726	0	Sewer 150 <1.5m deep: Nodes R2e/1 - R2/10	49.93	25.00	12.48
SMA.058727	0	Sewer 150 <1.5m deep: Nodes R2e/2 - R2e/1	49.93	25.00	12.48
SMA.058728	0	Sewer 150 <1.5m deep: Nodes R2e/3 - R2e/2	49.93	25.00	12.48
SMA.058729	0	Sewer 150 <1.5m deep: Nodes R2e/4 - R2e/3	49.93	25.00	12.48
SMA.058730	0	Sewer 150 <1.5m deep: Nodes R2e/5 - R2e/4	49.93	25.00	12.48
SMA.058734	0	Sewer 150 <1.5m deep: Nodes R2e/9 - R2e/8	49.93	25.00	12.48
SMA.058735	0	Sewer 150 <1.5m deep: Nodes R2f/2 - R2f/1	49.93	25.00	12.48

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SMA.058736	0	Sewer 150 <1.5m deep: Nodes R2f/3 - R2f/2	49.93	25.00	12.48
SMA.058737	0	Sewer 150 <1.5m deep: Nodes R2f/4 - R2f/3	49.93	25.00	12.48
SMA.058738	0	Sewer 150 <1.5m deep: Nodes R2f/4 - R2f/3	49.93	25.00	12.48
SMA.058739	0	Sewer 150 <1.5m deep: Nodes R2f/5 - R2f/4	49.93	25.00	12.48
SMA.058745	0	Sewer 150 <1.5m deep: Nodes R2f/8 - R2f/7	49.93	25.00	12.48
SMA.058746	0	Sewer 150 <1.5m deep: Nodes R2g/1 - R2/13	49.93	25.00	12.48
SMA.058748	0	Sewer 150 <1.5m deep: Nodes R2g/2 - R2g/1	49.93	25.00	12.48
SMA.058749	0	Sewer 150 <1.5m deep: Nodes R2g/3 - R2g/2	49.93	25.00	12.48
SMA.058750	0	Sewer 150 <1.5m deep: Nodes R2g/4 - R2g/3	49.93	25.00	12.48
SMA.058752	0	Sewer 150 <1.5m deep: Nodes R2g/6 - R2g/5	49.93	25.00	12.48
SMA.058754	0	Sewer 150 <1.5m deep: Nodes R2g/8 - R2g/7	49.93	25.00	12.48
SMA.058755	0	Sewer 150 <1.5m deep: Nodes R2g/9 - R2g/8	49.93	25.00	12.48
SMA.058756	0	Sewer 150 <1.5m deep: Nodes R2g1/1 - R2g/4	49.93	25.00	12.48
SMA.058760	0	Sewer 150 <1.5m deep: Nodes R2h/4 - R2h/3	49.93	25.00	12.48
SMA.058761	0	Sewer 150 <1.5m deep: Nodes R2h/5 - R2h/4	49.93	25.00	12.48
SMA.058762	0	Sewer 150 <1.5m deep: Nodes R2h/6 - R2h/5	49.93	25.00	12.48
SMA.058767	0	Sewer 150 <1.5m deep: Nodes R2h1/2 - R2h1/1	49.93	25.00	12.48
SMA.058768	0	Sewer 150 <1.5m deep: Nodes R2h1/3 - R2h1/2	49.93	25.00	12.48
SMA.058769	0	Sewer 150 <1.5m deep: Nodes R2h1/4 - R2h1/3	49.93	25.00	12.48
SMA.058771	0	Sewer 150 <1.5m deep: Nodes R2i/2 - R2i/1	49.93	25.00	12.48
SMA.058772	0	Sewer 150 <1.5m deep: Nodes R2i/3 - R2i/2	49.93	25.00	12.48
SMA.058779	0	Sewer 150 <1.5m deep: Nodes R2k/3 - R2k/2	49.93	25.00	12.48
SMA.058791	0	Sewer 150 <1.5m deep: Nodes R3a/2 - R3a/1	49.93	25.00	12.48
SMA.058793	0	Sewer 150 <1.5m deep: Nodes R3a/4 - R3a/3	49.93	25.00	12.48
SMA.058794	0	Sewer 150 <1.5m deep: Nodes R3b/1 - R3/3	49.93	25.00	12.48
CSY.011818	Gympie Sewerage Treatment Plant	08 Aerobic Digester - Instrumentation	48.94	25.00	12.24
CSY.011819	Gympie Sewerage Treatment Plant	08 Aerobic Digester - Instrumentation	48.94	25.00	12.24
SMA.055298	0	Sewer 100 >=1.5m deep: Nodes R4/3a - R4/4:R4/3	47.45	25.00	11.86
SMA.055299	0	Sewer 100 >=1.5m deep: Nodes R4/4b - R4/5:R4/4	47.45	25.00	11.86
SMA.055300	0	Sewer 100 >=1.5m deep: Nodes R4/5a - R4/6:R4/5	47.45	25.00	11.86
SMA.055301	0	Sewer 100 >=1.5m deep: Nodes R4/6b - R4/7:R4/6	47.45	25.00	11.86
SMA.055302	0	Sewer 100 >=1.5m deep: Nodes R4/7a - R4/7	47.45	25.00	11.86
SMA.058529	0	Sewer 150 <1.5m deep: Nodes R1a/17 - R1a/16	47.45	25.00	11.86
SMA.058530	0	Sewer 150 <1.5m deep: Nodes R1a/18 - R1a/17	47.45	25.00	11.86
SMA.058531	0	Sewer 150 <1.5m deep: Nodes R1a/19 - R1a/18	47.45	25.00	11.86
SMA.058534	0	Sewer 150 <1.5m deep: Nodes R1a/20 - R1a/19	47.45	25.00	11.86
SMA.058535	0	Sewer 150 <1.5m deep: Nodes R1a/21 - R1a/20	47.45	25.00	11.86
SMA.058539	0	Sewer 150 <1.5m deep: Nodes R1a/25 - R1a/24	47.45	25.00	11.86
SMA.058540	0	Sewer 150 <1.5m deep: Nodes R1a/25 - R1a/24	47.45	25.00	11.86
SMA.058551	0	Sewer 150 <1.5m deep: Nodes R1a1/13 - R1a1/12	47.45	25.00	11.86
SMA.058552	0	Sewer 150 <1.5m deep: Nodes R1a1/14 - R1a1/13	47.45	25.00	11.86
SMA.058625	0	Sewer 150 <1.5m deep: Nodes R1a5/3 - R1a5/2	47.45	25.00	11.86
SMA.058628	0	Sewer 150 <1.5m deep: Nodes R1a7/1 - R1a/17	47.45	25.00	11.86
SMA.058692	0	Sewer 150 <1.5m deep: Nodes R1k/1 - R1/27	47.45	25.00	11.86
SMA.058715	0	Sewer 150 <1.5m deep: Nodes R2b/2 - R2b/1	47.45	25.00	11.86
SMA.058731	0	Sewer 150 <1.5m deep: Nodes R2e/6 - R2e/5	47.45	25.00	11.86
SMA.058732	0	Sewer 150 <1.5m deep: Nodes R2e/7 - R2e/6	47.45	25.00	11.86
SMA.058733	0	Sewer 150 <1.5m deep: Nodes R2e/8 - R2e/7	47.45	25.00	11.86
SMA.058740	0	Sewer 150 <1.5m deep: Nodes R2f/6 - R2f/5	47.45	25.00	11.86
SMA.058741	0	Sewer 150 <1.5m deep: Nodes R2f/7 - R2f/6	47.45	25.00	11.86
SMA.058744	0	Sewer 150 <1.5m deep: Nodes R2f/8 - R2f/7b	47.45	25.00	11.86
SMA.058747	0	Sewer 150 <1.5m deep: Nodes R2g/10 - R2g/9	47.45	25.00	11.86
SMA.058751	0	Sewer 150 <1.5m deep: Nodes R2g/5 - R2g/4	47.45	25.00	11.86
SMA.058753	0	Sewer 150 <1.5m deep: Nodes R2g/7 - R2g/6	47.45	25.00	11.86
SMA.058757	0	Sewer 150 <1.5m deep: Nodes R2h/1 - R2/14	47.45	25.00	11.86
SMA.058758	0	Sewer 150 <1.5m deep: Nodes R2h/2 - R2h/1	47.45	25.00	11.86
SMA.058759	0	Sewer 150 <1.5m deep: Nodes R2h/3 - R2h/2	47.45	25.00	11.86
SMA.058763	0	Sewer 150 <1.5m deep: Nodes R2h/7 - R2h/6	47.45	25.00	11.86
SMA.058764	0	Sewer 150 <1.5m deep: Nodes R2h/8 - R2h/7	47.45	25.00	11.86
SMA.058765	0	Sewer 150 <1.5m deep: Nodes R2h/9 - R2h/8	47.45	25.00	11.86

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SMA.058766	0	Sewer 150 <1.5m deep: Nodes R2h1/1 - R2h/1	47.45	25.00	11.86
SMA.058774	0	Sewer 150 <1.5m deep: Nodes R2i/5 - R2i/4	47.45	25.00	11.86
SMA.058775	0	Sewer 150 <1.5m deep: Nodes R2i/6 - R2i/5	47.45	25.00	11.86
SMA.058776	0	Sewer 150 <1.5m deep: Nodes R2j/1 - R2/17	47.45	25.00	11.86
SMA.058777	0	Sewer 150 <1.5m deep: Nodes R2k/1 - R2/2a	47.45	25.00	11.86
SMA.058778	0	Sewer 150 <1.5m deep: Nodes R2k/2 - R2k/1	47.45	25.00	11.86
SMA.058780	0	Sewer 150 <1.5m deep: Nodes R2k/4 - R2k/3	47.45	25.00	11.86
SMA.058792	0	Sewer 150 <1.5m deep: Nodes R3a/3 - R3a/2	47.45	25.00	11.86
SMA.058795	0	Sewer 150 <1.5m deep: Nodes R3b/2 - R3b/1	47.45	25.00	11.86
SMA.058796	0	Sewer 150 <1.5m deep: Nodes R3b/3 - R3b/2	47.45	25.00	11.86
SMA.058816	0	Sewer 150 <1.5m deep: Nodes R5a1/1 - R5a/4	47.45	25.00	11.86
CSY.011812	Gympie Sewerage Treatment Plant	05 Clarification - Instrumentation	46.46	25.00	11.61
CSY.011814	Gympie Sewerage Treatment Plant	05 Clarification - Instrumentation	46.46	25.00	11.61
WHV.001827	0	Fire Hydrant	22.06	50.00	11.03
WHV.001828	0	Fire Hydrant	22.06	50.00	11.03
WHV.001829	0	Fire Hydrant	22.06	50.00	11.03
WHV.001830	0	Fire Hydrant	22.06	50.00	11.03
WHV.001831	0	Fire Hydrant	22.06	50.00	11.03
WHV.001832	0	Fire Hydrant	22.06	50.00	11.03
WHV.001833	0	Fire Hydrant	22.06	50.00	11.03
WHV.001834	0	Fire Hydrant	22.06	50.00	11.03
WHV.001836	0	Fire Hydrant	22.06	50.00	11.03
WHV.001838	0	Fire Hydrant	22.06	50.00	11.03
WHV.001839	0	Fire Hydrant	22.06	50.00	11.03
WHV.001840	0	Fire Hydrant	22.06	50.00	11.03
WHV.001841	0	Fire Hydrant	22.06	50.00	11.03
WHV.001842	0	Fire Hydrant	22.06	50.00	11.03
WHV.001845	0	Fire Hydrant	22.06	50.00	11.03
WHV.001847	0	Fire Hydrant	22.06	50.00	11.03
WHV.001962	0	Fire Hydrant	22.06	50.00	11.03
WHV.002017	0	Fire Hydrant	22.06	50.00	11.03
WHV.002025	0	Fire Hydrant	22.06	50.00	11.03
WHV.002029	0	Fire Hydrant	22.06	50.00	11.03
WHV.002030	0	Fire Hydrant	22.06	50.00	11.03
WHV.002031	0	Fire Hydrant	22.06	50.00	11.03
WHV.002032	0	Fire Hydrant	22.06	50.00	11.03
WHV.002033	0	Fire Hydrant	22.06	50.00	11.03
WHV.002052	0	Fire Hydrant	22.06	50.00	11.03
WHV.002055	0	Fire Hydrant	22.06	50.00	11.03
WHV.002056	0	Fire Hydrant	22.06	50.00	11.03
WHV.002057	0	Fire Hydrant	22.06	50.00	11.03
WHV.002061	0	Fire Hydrant	22.06	50.00	11.03
WHV.002063	0	Fire Hydrant	22.06	50.00	11.03
WHV.002069	0	Fire Hydrant	22.06	50.00	11.03
WHV.002073	0	Fire Hydrant	22.06	50.00	11.03
WHV.002074	0	Fire Hydrant	22.06	50.00	11.03
WHV.002075	0	Fire Hydrant	22.06	50.00	11.03
WHV.002080	0	Fire Hydrant	22.06	50.00	11.03
WHV.002081	0	Fire Hydrant	22.06	50.00	11.03
WHV.002082	0	Fire Hydrant	22.06	50.00	11.03
WHV.002083	0	Fire Hydrant	22.06	50.00	11.03
WHV.002084	0	Fire Hydrant	22.06	50.00	11.03
WHV.002085	0	Fire Hydrant	22.06	50.00	11.03
WHV.002086	0	Fire Hydrant	22.06	50.00	11.03
WHV.002087	0	Fire Hydrant	22.06	50.00	11.03
WHV.002088	0	Fire Hydrant	22.06	50.00	11.03
WHV.002094	0	Fire Hydrant	22.06	50.00	11.03
WHV.002095	0	Fire Hydrant	22.06	50.00	11.03
WHV.002096	0	Fire Hydrant	22.06	50.00	11.03
WHV.002097	0	Fire Hydrant	22.06	50.00	11.03

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WHV.002098	0	Fire Hydrant	22.06	50.00	11.03
WHV.002099	0	Fire Hydrant	22.06	50.00	11.03
WHV.002100	0	Fire Hydrant	22.06	50.00	11.03
WHV.002101	0	Fire Hydrant	22.06	50.00	11.03
WHV.002102	0	Fire Hydrant	22.06	50.00	11.03
WHV.002103	0	Fire Hydrant	22.06	50.00	11.03
WHV.002104	0	Fire Hydrant	22.06	50.00	11.03
WHV.002105	0	Fire Hydrant	22.06	50.00	11.03
WHV.002106	0	Fire Hydrant	22.06	50.00	11.03
WHV.002110	0	Fire Hydrant	22.06	50.00	11.03
WHV.002119	0	Fire Hydrant	22.06	50.00	11.03
WHV.002121	0	Fire Hydrant	22.06	50.00	11.03
WHV.002125	0	Fire Hydrant	22.06	50.00	11.03
WHV.002126	0	Fire Hydrant	22.06	50.00	11.03
WHV.002127	0	Fire Hydrant	22.06	50.00	11.03
WHV.002128	0	Fire Hydrant	22.06	50.00	11.03
WPE.001749	Jones Hill WTP	12 Siteworks - Emergency Shower	44.07	25.00	11.02
CSY.011827	Gympie Sewerage Treatment Plant	12 Siteworks - Telemetry	43.97	25.00	10.99
CSY.011800	Gympie Sewerage Treatment Plant	01b Inlet works - Local Control Panel	43.44	25.00	10.86
CSY.011801	Gympie Sewerage Treatment Plant	01c Inlet works - Local Control Panel	43.44	25.00	10.86
CSY.011802	Gympie Sewerage Treatment Plant	01d Inlet works - Autosampler	43.44	25.00	10.86
CSY.011803	Gympie Sewerage Treatment Plant	02 Flow Balance - Local Control Panel	43.44	25.00	10.86
CSY.011804	Gympie Sewerage Treatment Plant	02 Flow Balance - Local Control Panel	43.44	25.00	10.86
CSY.011805	Gympie Sewerage Treatment Plant	02 Flow Balance - Local Control Panel	43.44	25.00	10.86
CSY.011806	Gympie Sewerage Treatment Plant	02a Bioreactor Feed PS - Local Control Panel	43.44	25.00	10.86
CSY.011808	Gympie Sewerage Treatment Plant	04 Bioreactor - Local Control Panel	43.44	25.00	10.86
CSY.011810	Gympie Sewerage Treatment Plant	04 Bioreactor - Local Control Panel	43.44	25.00	10.86
CSY.011816	Gympie Sewerage Treatment Plant	06 RAS PS - Local Control Panel	43.44	25.00	10.86
CSY.011824	Gympie Sewerage Treatment Plant	10 Service Water PS - Local Control Panel	43.44	25.00	10.86
SVC.M3168	0	Sewerage House Connection Branch - 100 mm	41.93	25.00	10.48
SVC.M1456177	0	Sewerage House Connection Branch - 100 mm	41.93	25.00	10.48
SVC.0000M839	0	Sewerage House Connection Branch - 100 mm	41.93	25.00	10.48
WMA.009208	0	Water 150 PVC: Nodes 88 - 58	41.11	25.00	10.28
WMA.009397	0	Water 150 DI: Nodes 74 - 72	41.11	25.00	10.28
CSY.011799	Gympie Sewerage Treatment Plant	01a Inlet works - Local Control Panel	40.96	25.00	10.24
CSY.011807	Gympie Sewerage Treatment Plant	04 Bioreactor - Local Control Panel	40.96	25.00	10.24
CSY.011811	Gympie Sewerage Treatment Plant	04 Bioreactor - Local Control Panel	40.96	25.00	10.24
CSY.011813	Gympie Sewerage Treatment Plant	05 Clarification - Local Control Panel	40.96	25.00	10.24
CSY.011815	Gympie Sewerage Treatment Plant	05 Clarification - Local Control Panel	40.96	25.00	10.24
CSY.011817	Gympie Sewerage Treatment Plant	07 Scum PS - Local Control Panel	40.96	25.00	10.24
CSY.011820	Gympie Sewerage Treatment Plant	09b Filtration - Local Control Panel	40.96	25.00	10.24
CSY.011821	Gympie Sewerage Treatment Plant	09c Filtration - Local Control Panel	40.96	25.00	10.24
WMA.009261	0	Water 150 PVC: Nodes 96 - 56	40.62	25.00	10.15
WMA.009398	0	Water 150 DI: Nodes 150 - 151	40.62	25.00	10.15
WMA.009403	0	Water 150 DI: Nodes 79 - 91	40.62	25.00	10.15
WMA.009405	0	Water 150 DI: Nodes 74 - 150	40.62	25.00	10.15
WMA.008875	0	Water 100 PVC: Nodes 98 - 96	39.36	25.00	9.84
CIV.000974	Gympie Sewerage Treatment Plant	01c Inlet works - Bunding	39.27	25.00	9.82
WMA.009396	0	Water 150 DI: Nodes 82 - 81	39.00	25.00	9.75
WMA.008915	0	Water 100 PVC: Nodes 90 - 89	38.88	25.00	9.72
WMA.008917	0	Water 100 PVC: Nodes 89 - 67	38.88	25.00	9.72
WMA.008918	0	Water 100 PVC: Nodes 88 - 89	38.88	25.00	9.72
WMA.009056	0	Water 100 AC: Nodes 31 - 21	38.88	25.00	9.72
WMA.009201	0	Water 100 DI: Nodes 150 - 153	38.88	25.00	9.72
WMA.009202	0	Water 100 DI: Nodes 75 - 158	38.88	25.00	9.72
WMA.009203	0	Water 100 DI: Nodes 151 - 156	38.88	25.00	9.72
WMA.009204	0	Water 100 DI: Nodes 154 - 155	38.88	25.00	9.72
WMA.009209	0	Water 150 PVC: Nodes 91 - 88	38.51	25.00	9.63
WMA.009260	0	Water 150 PVC: Nodes 97 - 96	38.51	25.00	9.63
WMA.009399	0	Water 150 DI: Nodes 81 - 79	38.51	25.00	9.63

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WMA.009400	0	Water 150 DI: Nodes 78 - 77	38.51	25.00	9.63
WMA.009401	0	Water 150 DI: Nodes 84 - 82	38.51	25.00	9.63
WMA.009402	0	Water 150 DI: Nodes 151 - 152	38.51	25.00	9.63
WMA.009404	0	Water 150 DI: Nodes 75 - 71	38.51	25.00	9.63
CIV.000991	Gympie Sewerage Treatment Plant	05 Clarification - Coating	38.07	25.00	9.52
WMA.009206	0	Water 100 DI: Nodes 80 - 79	37.26	25.00	9.31
WMA.008871	0	Water 100 AC: Nodes 99 - 27	36.77	25.00	9.19
WMA.008946	0	Water 100 PVC: Nodes 40 - 39	36.77	25.00	9.19
WMA.009205	0	Water 100 DI: Nodes 83 - 82	36.77	25.00	9.19
WHV.002718	0	Valve Sluice 200-225	36.51	25.00	9.13
WHV.002720	0	Valve Sluice 200-225	36.51	25.00	9.13
WHV.002722	0	Valve Sluice 200-225	36.51	25.00	9.13
WHV.002723	0	Valve Sluice 200-225	36.51	25.00	9.13
WHV.002724	0	Valve Sluice 200-225	36.51	25.00	9.13
WHV.002725	0	Valve Sluice 200-225	36.51	25.00	9.13
WHV.002727	0	Valve Sluice 200-225	36.51	25.00	9.13
WHV.002736	0	Valve Sluice 250-300	36.51	25.00	9.13
WHV.002737	0	Valve Sluice 250-300	36.51	25.00	9.13
WHV.002738	0	Valve Sluice 250-300	36.51	25.00	9.13
WHV.002739	0	Valve Sluice 250-300	36.51	25.00	9.13
WHV.002740	0	Valve Sluice 250-300	36.51	25.00	9.13
WHV.002743	0	Valve Sluice 250-300	36.51	25.00	9.13
WHV.002744	0	Valve Sluice 250-300	36.51	25.00	9.13
WHV.002756	0	Valve Sluice 250-300	36.51	25.00	9.13
CIV.001008	Gympie Sewerage Treatment Plant	12 Siteworks - Fencing	35.65	25.00	8.91
ELE.001514	Gympie Sewerage Treatment Plant	12 Siteworks - Power, Solar	35.17	25.00	8.79
SMA.062487	0	Sewer RM 225: Nodes PS-R1 - PS-R1 Junction 1	76.96	10.00	7.70
WMR.G1401514	0	Water Meter - 40mm	30.66	25.00	7.66
SMA.062451	0	Sewer RM 100: Nodes PS-R7 - PS-R3	75.73	10.00	7.57
SMA.062269	0	Sewer 225 DI: Nodes R1a8a/3 - PS-R1	71.99	10.00	7.20
WPU.001660	Jones Hill WTP	11 Chemical Dosing - Pump Dosing 1	71.66	10.00	7.17
WPU.001661	Jones Hill WTP	11 Chemical Dosing - Pump Dosing 2	71.66	10.00	7.17
WMS.M3168	0	Water Service - 20mm	28.40	25.00	7.10
WMS.M89722835	0	Water Service - 80mm	28.40	25.00	7.10
WMR.G1200321	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001296	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001913	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001626	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001702	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001265	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100341	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201116	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001438	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001409	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202440	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1501353	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001820	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001107	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001941	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1300167	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1401305	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202511	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1100366	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002058	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002052	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002051	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002054	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201414	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001378	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100363	0	Water Meter - 20mm	28.40	25.00	7.10

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WMR.G1200402	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201403	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201397	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001620	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201401	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201400	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201412	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201307	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201407	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201396	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200428	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201406	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001962	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202508	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001372	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201415	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001375	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202499	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001779	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001373	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001966	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201398	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001777	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001370	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001775	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202473	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200034	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001953	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202474	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200036	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002042	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200396	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200401	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200400	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202495	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202494	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202472	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001385	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200399	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202490	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202483	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001624	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001382	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200471	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200406	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200470	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001389	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001915	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001388	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202477	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200466	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200474	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001912	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001832	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001806	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001827	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200267	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200266	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001104	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200247	0	Water Meter - 20mm	28.40	25.00	7.10

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1001836	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200441	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001837	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200281	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200278	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001785	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001834	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001830	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200364	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1102188	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002085	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200371	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200017	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002039	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100294	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200014	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1401494	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001838	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1401510	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002012	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200311	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002034	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100203	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002035	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001839	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002032	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201046	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1301563	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001290	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001809	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100360	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100361	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200326	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001704	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.M3168	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200481	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200270	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001706	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1400929	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001947	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001109	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001101	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200258	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1301404	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200476	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001106	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001741	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200314	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001740	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001743	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001742	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001747	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002007	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002006	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202435	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1002004	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202426	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1002002	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200272	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001794	0	Water Meter - 20mm	28.40	25.00	7.10

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1200277	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201801	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200183	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200376	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200186	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.M89722835	0	Water Meter - 80mm	28.40	25.00	7.10
WMR.G1001796	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001790	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1401650	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202444	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202422	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001433	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200136	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100135	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100137	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001204	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001208	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100142	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100338	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001432	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001299	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100336	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100485	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100095	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100134	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100102	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001292	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001436	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001434	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001687	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001683	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001402	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001404	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001405	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001407	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001406	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001295	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001724	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001727	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001268	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001435	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100353	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001431	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100334	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001437	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001202	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100339	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200301	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001267	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200215	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001261	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001263	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001269	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001266	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001929	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001841	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001842	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202445	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200978	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200979	0	Water Meter - 20mm	28.40	25.00	7.10

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1200787	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200137	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200980	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200973	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200789	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200138	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200975	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200974	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200139	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200135	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200981	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202428	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202431	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001940	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001942	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202429	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200472	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001945	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1102208	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200473	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001949	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001103	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001703	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001105	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202467	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1401516	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202433	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1401420	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200254	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200478	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202452	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200994	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200264	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200269	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001108	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1401440	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1401438	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202461	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1401497	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1300161	0	Water Meter - 32mm	28.40	25.00	7.10
WMR.G1202449	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001705	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200251	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200250	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200427	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001961	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001773	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001770	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001914	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001701	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001383	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200366	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201140	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001910	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001386	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200468	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202466	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200469	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200479	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202492	0	Water Meter - 25mm	28.40	25.00	7.10

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1200443	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200265	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200242	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200450	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200446	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200271	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200318	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200243	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200262	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001952	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001625	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001918	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202485	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202480	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202496	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1102217	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200405	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200398	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202479	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200395	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200393	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001381	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200411	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202478	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1201136	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1400113	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1300347	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200407	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001959	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001917	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001959	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001917	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001384	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200467	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200273	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001916	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001911	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200462	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200463	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200397	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200464	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001951	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001950	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002059	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1401355	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200423	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002041	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002048	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002045	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200037	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200035	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002043	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200032	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200426	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200038	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002046	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001776	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001960	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201147	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200033	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200392	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002049	0	Water Meter - 20mm	28.40	25.00	7.10

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1001955	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002040	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200409	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202486	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1002047	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001781	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001958	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002083	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002080	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202484	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001957	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001954	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001965	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001963	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201289	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202342	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200425	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200431	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001371	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001969	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001376	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202510	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200430	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202497	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001374	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002057	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002053	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201377	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202500	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1401414	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202509	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1002050	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202549	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1100113	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002056	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001772	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200404	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201404	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001377	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001628	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001629	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201409	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100369	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100364	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001771	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001774	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001964	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200429	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201402	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202502	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1100371	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202503	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202501	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1002055	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001623	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001622	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200453	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201405	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001967	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001379	0	Water Meter - 20mm	28.40	25.00	7.10

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1200461	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200458	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200424	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100115	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100368	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200456	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200422	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200460	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201399	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001778	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001387	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001919	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100121	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200465	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202488	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202470	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1201379	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202489	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202471	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1003224	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201109	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1300062	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202450	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202430	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200260	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202454	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001744	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001948	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200475	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202493	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200134	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001200	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001201	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001203	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001207	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001206	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100357	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100362	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200783	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100136	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200126	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200784	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100141	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200127	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100355	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001294	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001720	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1401418	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001686	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200122	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001688	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001728	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001684	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001726	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100354	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001685	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100333	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200131	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001680	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001297	0	Water Meter - 20mm	28.40	25.00	7.10

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1200300	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100359	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100358	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1401995	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200123	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200130	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200790	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200782	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100098	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100096	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200786	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100099	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100093	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001291	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001682	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201283	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200785	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100094	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100138	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200791	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100139	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001430	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200125	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002030	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001408	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1401474	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100335	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200129	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001439	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200788	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001262	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100486	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202643	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001992	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100301	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100337	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100340	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200976	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200977	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200132	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001700	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201276	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001709	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200255	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202427	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001100	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001746	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202451	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200313	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001745	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001708	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201295	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200187	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001707	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001748	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001802	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001749	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001805	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200190	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001823	0	Water Meter - 20mm	28.40	25.00	7.10

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1001829	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001807	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001828	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001792	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001799	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202434	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001798	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201191	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200447	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002005	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202453	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200182	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001821	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001784	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200230	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100488	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200225	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200237	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002033	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100299	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200229	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100300	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002031	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002011	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200378	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100298	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100204	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202439	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200377	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001995	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200363	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001998	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002038	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200370	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200365	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002018	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200368	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001831	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200369	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200241	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001997	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200015	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200019	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200235	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002015	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1500606	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1201123	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200279	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202438	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200302	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100492	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001786	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200227	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200236	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100489	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100208	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200362	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100491	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100295	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200238	0	Water Meter - 20mm	28.40	25.00	7.10

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1202459	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200439	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200239	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001991	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100206	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200231	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001994	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100293	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001833	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201124	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200445	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001996	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201119	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200222	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200374	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200367	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100207	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200381	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100205	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200373	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001993	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200224	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1401329	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200380	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002088	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200375	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100211	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201112	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200303	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200448	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001803	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001788	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100297	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201120	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200233	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200240	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201122	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1201115	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1501349	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1501350	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1201125	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200316	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201111	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200451	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100212	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202457	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200319	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100296	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100210	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200379	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200312	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001783	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001789	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001800	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200315	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201141	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200320	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1401328	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201108	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1201117	0	Water Meter - 25mm	28.40	25.00	7.10

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1200232	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200234	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202437	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1201110	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1100302	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002017	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200133	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201118	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200309	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201047	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200310	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002019	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1100342	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200307	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200308	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202425	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200433	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202442	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202443	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001797	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200021	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202432	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202447	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202419	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200248	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200249	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202455	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200246	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200244	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202460	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1100484	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001787	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200016	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001801	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202436	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1201228	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001822	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001824	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202465	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202464	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202423	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1202441	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1102229	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1201067	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1201066	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200329	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202458	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200327	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200323	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201113	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200322	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202421	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200324	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202463	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1100209	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201068	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200325	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202424	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200435	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202446	0	Water Meter - 25mm	28.40	25.00	7.10

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1001791	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202420	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200434	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002009	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001795	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201802	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200280	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1202418	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1200438	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200184	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001825	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002008	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001793	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200436	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002001	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002003	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200432	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200437	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200256	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002000	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200191	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1200189	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1401352	0	Water Meter - 25mm	28.40	25.00	7.10
WMR.G1001840	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001927	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001944	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002087	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002086	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002081	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001990	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002081	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001990	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002084	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002037	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001780	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001999	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002010	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002016	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001782	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002014	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001804	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1002013	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001826	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1001808	0	Water Meter - 20mm	28.40	25.00	7.10
WMR.G1201121	0	Water Meter - 25mm	28.40	25.00	7.10
SMA.062511	0	Sewer RM 63 OD Poly: Nodes PS-R6 - R1d/5	70.75	10.00	7.08
SMA.062067	0	Sewer 225 <1.5m deep: Nodes R1a8/2 - R1a8a/1	70.56	10.00	7.06
SMA.062221	0	Sewer 225 >=1.5m deep: Nodes R4a/4 - R4a2a/02	69.33	10.00	6.93
SMA.062222	0	Sewer LongLife 100-375 >=1.5m: Nodes R4a/5 - R4a/4	69.33	10.00	6.93
SMA.062223	0	Sewer 225 >=1.5m deep: Nodes R4a2a/02 - R4a2a/01	69.33	10.00	6.93
SMA.062224	0	Sewer LongLife 100-375 >=1.5m: Nodes R4a2a/01 - R4a/2	69.33	10.00	6.93
SMA.062064	0	Sewer 225 <1.5m deep: Nodes R1a1/1a - R1a1/1b-1	68.07	10.00	6.81
SMA.062065	0	Sewer 225 <1.5m deep: Nodes R1a1/1b-2 - R1a1/1b	68.07	10.00	6.81
SMA.062066	0	Sewer 225 <1.5m deep: Nodes R1a1/1b-1 - R1a1/1b-2	68.07	10.00	6.81
SMA.062068	0	Sewer 225 <1.5m deep: Nodes R1a8a/1 - R1a8a/2	68.07	10.00	6.81
SMA.062069	0	Sewer 225 <1.5m deep: Nodes R1a8a/2 - R1a8a/3	68.07	10.00	6.81
WHV.005760	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005820	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005830	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005831	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005835	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005836	0	Valve Sluice 080-150	26.74	25.00	6.68

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WHV.005837	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005838	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005839	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005847	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005851	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005857	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005862	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005863	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005864	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005866	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005867	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005869	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005887	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005888	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005979	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005982	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005993	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.005997	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.006008	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.006109	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.006110	0	Valve Sluice 080-150	26.74	25.00	6.68
WHV.006173	0	Valve Sluice 080-150	26.74	25.00	6.68
SMA.062077	0	Sewer LongLife 100-375 <1.5m: Nodes R4a/3 - R4a2a/01	66.84	10.00	6.68
SMA.062220	0	Sewer LongLife 100-375 >=1.5m: Nodes R4a/2 - R4a/1	66.84	10.00	6.68
BLD.00401	Jones Hill WTP	11 Chemical Dosing - Jones Hill WTP	66.84	10.00	6.68
WMA.009476	0	Water 300 PVC: Nodes -	64.78	10.00	6.48
WPE.001737	Jones Hill WTP	11 Chemical Dosing - Saturator	64.33	10.00	6.43
WPE.001739	Jones Hill WTP	11 Chemical Dosing - Vacuum Loader	64.33	10.00	6.43
SMA.061456	0	Sewer LongLife 100-375 >=1.5m: Nodes R4/1 - PS-R4	63.40	10.00	6.34
SMA.061457	0	Sewer LongLife 100-375 >=1.5m: Nodes R4/2 - R4/1	63.40	10.00	6.34
SMA.061458	0	Sewer LongLife 100-375 >=1.5m: Nodes R4/3 - R4/2	63.40	10.00	6.34
SMA.061459	0	Sewer LongLife 100-375 >=1.5m: Nodes R4/4 - R4/3	63.40	10.00	6.34
SMA.061461	0	Sewer LongLife 100-375 >=1.5m: Nodes R4/5 - R4/4	63.40	10.00	6.34
SMA.061462	0	Sewer LongLife 100-375 >=1.5m: Nodes R4/6 - R4/5	63.40	10.00	6.34
SMA.061464	0	Sewer LongLife 100-375 >=1.5m: Nodes R4/7 - R4/6	63.40	10.00	6.34
WMA.009434	0	Water 300 PVC: Nodes -	62.68	10.00	6.27
WMA.009439	0	Water 300 PVC: Nodes -	62.68	10.00	6.27
WMA.009448	0	Water 300 PVC: Nodes -	62.68	10.00	6.27
WMA.009450	0	Water 300 PVC: Nodes -	62.68	10.00	6.27
WMA.009455	0	Water 300 PVC: Nodes -	62.68	10.00	6.27
WMA.009462	0	Water 300 PVC: Nodes -	62.68	10.00	6.27
WMA.009465	0	Water 300 PVC: Nodes -	62.68	10.00	6.27
WMA.009473	0	Water 300 PVC: Nodes -	62.68	10.00	6.27
WMA.009474	0	Water 300 PVC: Nodes -	62.68	10.00	6.27
WMA.009475	0	Water 300 PVC: Nodes -	62.68	10.00	6.27
WMA.009477	0	Water 300 PVC: Nodes -	62.68	10.00	6.27
WMA.009479	0	Water 300 PVC: Nodes -	62.68	10.00	6.27
SMA.058712	0	Sewer 150 <1.5m deep: Nodes R2a/1 - R2	60.92	10.00	6.09
SMA.058797	0	Sewer 150 <1.5m deep: Nodes R5/1 - R5/2	60.92	10.00	6.09
SMA.058798	0	Sewer 150 <1.5m deep: Nodes R5/2 - R5/1	60.92	10.00	6.09
SMA.058800	0	Sewer 150 <1.5m deep: Nodes R5/3 - R5/2	60.92	10.00	6.09
SMA.058801	0	Sewer 150 <1.5m deep: Nodes R5/4 - R5/3	60.92	10.00	6.09
SMA.058802	0	Sewer 150 <1.5m deep: Nodes R5/5 - R5/4	60.92	10.00	6.09
SMA.058803	0	Sewer 150 <1.5m deep: Nodes R5a/1 - R5/2	60.92	10.00	6.09
SMA.061466	0	Sewer LongLife 100-375 >=1.5m: Nodes R4a/1 - PS-R4	60.92	10.00	6.09
WMA.009433	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009435	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009436	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009437	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009438	0	Water 300 PVC: Nodes -	60.57	10.00	6.06

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMA.009440	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009441	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009442	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009443	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009444	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009445	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009446	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009447	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009449	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009451	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009452	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009453	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009454	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009456	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009457	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009458	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009459	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009460	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009461	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009463	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009464	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009466	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009467	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009468	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009469	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009470	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009471	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009472	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009478	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009480	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
WMA.009481	0	Water 300 PVC: Nodes -	60.57	10.00	6.06
BLD.00382	Gympie Sewerage Treatment Plant	12 Siteworks - Gympie STP - Adminstration/Control Building	60.46	10.00	6.05
WMA.009429	0	Water 250 PVC: Nodes 113 - 114A	58.07	10.00	5.81
WMA.009430	0	Water 250 PVC: Nodes 114A - 116A	58.07	10.00	5.81
SMH.052639	0	Sewer MH <1.5m deep: Node R1/1	57.65	10.00	5.77
SMH.052640	0	Sewer MH <1.5m deep: Node R1/11	57.65	10.00	5.77
SMH.052642	0	Sewer MH <1.5m deep: Node R1/13	57.65	10.00	5.77
SMH.052643	0	Sewer MH <1.5m deep: Node R1/14	57.65	10.00	5.77
SMH.052644	0	Sewer MH <1.5m deep: Node R1/15	57.65	10.00	5.77
SMH.052645	0	Sewer MH <1.5m deep: Node R1/16	57.65	10.00	5.77
SMH.052653	0	Sewer MH <1.5m deep: Node R1/23	57.65	10.00	5.77
SMH.052656	0	Sewer MH <1.5m deep: Node R1/26	57.65	10.00	5.77
SMH.052657	0	Sewer MH <1.5m deep: Node R1/27	57.65	10.00	5.77
SMH.052658	0	Sewer MH <1.5m deep: Node R1/28	57.65	10.00	5.77
SMH.052659	0	Sewer MH <1.5m deep: Node R1/29	57.65	10.00	5.77
SMH.052661	0	Sewer MH <1.5m deep: Node R1/30	57.65	10.00	5.77
SMH.052665	0	Sewer MH <1.5m deep: Node R1/34	57.65	10.00	5.77
SMH.052667	0	Sewer MH <1.5m deep: Node R1/4	57.65	10.00	5.77
SMH.052668	0	Sewer MH <1.5m deep: Node R1/5	57.65	10.00	5.77
SMH.052670	0	Sewer MH <1.5m deep: Node R1/7	57.65	10.00	5.77
SMH.052671	0	Sewer MH <1.5m deep: Node R1/8	57.65	10.00	5.77
SMH.052673	0	Sewer MH <1.5m deep: Node R1a/17	57.65	10.00	5.77
SMH.052674	0	Sewer MH <1.5m deep: Node R1a/18	57.65	10.00	5.77
SMH.052675	0	Sewer MH <1.5m deep: Node R1a/19	57.65	10.00	5.77
SMH.052679	0	Sewer MH <1.5m deep: Node R1a/15	57.65	10.00	5.77
SMH.052680	0	Sewer MH <1.5m deep: Node R1a/13	57.65	10.00	5.77
SMH.052681	0	Sewer MH <1.5m deep: Node R1a/10	57.65	10.00	5.77
SMH.052682	0	Sewer MH <1.5m deep: Node R1a/2	57.65	10.00	5.77
SMH.052685	0	Sewer MH <1.5m deep: Node R1a/21	57.65	10.00	5.77
SMH.052687	0	Sewer MH <1.5m deep: Node R1a/25	57.65	10.00	5.77

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SMH.052691	0	Sewer MH <1.5m deep: Node R1a/5	57.65	10.00	5.77
SMH.052692	0	Sewer MH <1.5m deep: Node R1a/6	57.65	10.00	5.77
SMH.052696	0	Sewer MH <1.5m deep: Node R1a1/14	57.65	10.00	5.77
SMH.052697	0	Sewer MH <1.5m deep: Node R1a1/10	57.65	10.00	5.77
SMH.052698	0	Sewer MH <1.5m deep: Node R1a1/11	57.65	10.00	5.77
SMH.052699	0	Sewer MH <1.5m deep: Node R1a1/13	57.65	10.00	5.77
SMH.052700	0	Sewer MH <1.5m deep: Node R1a1/15	57.65	10.00	5.77
SMH.052703	0	Sewer MH <1.5m deep: Node R1a1/7	57.65	10.00	5.77
SMH.052705	0	Sewer MH <1.5m deep: Node R1a1/5	57.65	10.00	5.77
SMH.052706	0	Sewer MH <1.5m deep: Node R1a1/9	57.65	10.00	5.77
SMH.052707	0	Sewer MH <1.5m deep: Node R1a1/8	57.65	10.00	5.77
SMH.052708	0	Sewer MH <1.5m deep: Node R1a1/1	57.65	10.00	5.77
SMH.052709	0	Sewer MH <1.5m deep: Node R1a1/2	57.65	10.00	5.77
SMH.052710	0	Sewer MH <1.5m deep: Node R1a1/3	57.65	10.00	5.77
SMH.055039	0	Sewer MH >=1.5m deep: Node R1/10	57.65	10.00	5.77
SMH.052838	0	Sewer MH <1.5m deep: Node R2/1	56.42	10.00	5.64
SMH.052839	0	Sewer MH <1.5m deep: Node R2/10	56.42	10.00	5.64
SMH.052841	0	Sewer MH <1.5m deep: Node R2/12	56.42	10.00	5.64
SMH.052842	0	Sewer MH <1.5m deep: Node R2/13	56.42	10.00	5.64
SMH.052843	0	Sewer MH <1.5m deep: Node R2/14	56.42	10.00	5.64
SMH.052846	0	Sewer MH <1.5m deep: Node R2/17	56.42	10.00	5.64
SMH.052847	0	Sewer MH <1.5m deep: Node R2/18	56.42	10.00	5.64
SMH.052849	0	Sewer MH <1.5m deep: Node R2/2	56.42	10.00	5.64
SMH.052852	0	Sewer MH <1.5m deep: Node R2/2a	56.42	10.00	5.64
SMH.052853	0	Sewer MH <1.5m deep: Node R2/3	56.42	10.00	5.64
SMH.052855	0	Sewer MH <1.5m deep: Node R2/5	56.42	10.00	5.64
SMH.052856	0	Sewer MH <1.5m deep: Node R2/6	56.42	10.00	5.64
SMH.052858	0	Sewer MH <1.5m deep: Node R2/8	56.42	10.00	5.64
SMH.052859	0	Sewer MH <1.5m deep: Node R2/9	56.42	10.00	5.64
SMH.052932	0	Sewer MH <1.5m deep: Node R3/4	56.42	10.00	5.64
SMH.052934	0	Sewer MH <1.5m deep: Node R3/6	56.42	10.00	5.64
SMH.052935	0	Sewer MH <1.5m deep: Node R3/7	56.42	10.00	5.64
SMH.052938	0	Sewer MH <1.5m deep: Node R3a/1	56.42	10.00	5.64
SMH.052939	0	Sewer MH <1.5m deep: Node R3a/2	56.42	10.00	5.64
SMH.052942	0	Sewer MH <1.5m deep: Node R3b/1	56.42	10.00	5.64
SMH.052943	0	Sewer MH <1.5m deep: Node R3b/2	56.42	10.00	5.64
WMA.009413	0	Water 200 PVC: Nodes -	55.73	10.00	5.57
WHV.001817	0	Fire Hydrant	22.06	25.00	5.52
WHV.001821	0	Fire Hydrant	22.06	25.00	5.52
WHV.001835	0	Fire Hydrant	22.06	25.00	5.52
WHV.001844	0	Fire Hydrant	22.06	25.00	5.52
WHV.001849	0	Fire Hydrant	22.06	25.00	5.52
WHV.001851	0	Fire Hydrant	22.06	25.00	5.52
WHV.001852	0	Fire Hydrant	22.06	25.00	5.52
WHV.001853	0	Fire Hydrant	22.06	25.00	5.52
WHV.001854	0	Fire Hydrant	22.06	25.00	5.52
WHV.001855	0	Fire Hydrant	22.06	25.00	5.52
WHV.001856	0	Fire Hydrant	22.06	25.00	5.52
WHV.001857	0	Fire Hydrant	22.06	25.00	5.52
WHV.001858	0	Fire Hydrant	22.06	25.00	5.52
WHV.001859	0	Fire Hydrant	22.06	25.00	5.52
WHV.001860	0	Fire Hydrant	22.06	25.00	5.52
WHV.001861	0	Fire Hydrant	22.06	25.00	5.52
WHV.001862	0	Fire Hydrant	22.06	25.00	5.52
WHV.001863	0	Fire Hydrant	22.06	25.00	5.52
WHV.001864	0	Fire Hydrant	22.06	25.00	5.52
WHV.001865	0	Fire Hydrant	22.06	25.00	5.52
WHV.001866	0	Fire Hydrant	22.06	25.00	5.52
WHV.001867	0	Fire Hydrant	22.06	25.00	5.52
WHV.001868	0	Fire Hydrant	22.06	25.00	5.52

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WHV.002020	0	Fire Hydrant	22.06	25.00	5.52
WHV.002038	0	Fire Hydrant	22.06	25.00	5.52
WHV.002039	0	Fire Hydrant	22.06	25.00	5.52
WHV.002054	0	Fire Hydrant	22.06	25.00	5.52
WHV.002058	0	Fire Hydrant	22.06	25.00	5.52
WHV.002059	0	Fire Hydrant	22.06	25.00	5.52
WHV.002060	0	Fire Hydrant	22.06	25.00	5.52
WHV.002062	0	Fire Hydrant	22.06	25.00	5.52
WHV.002064	0	Fire Hydrant	22.06	25.00	5.52
WHV.002065	0	Fire Hydrant	22.06	25.00	5.52
WHV.002066	0	Fire Hydrant	22.06	25.00	5.52
WHV.002067	0	Fire Hydrant	22.06	25.00	5.52
WHV.002068	0	Fire Hydrant	22.06	25.00	5.52
WHV.002071	0	Fire Hydrant	22.06	25.00	5.52
WHV.002072	0	Fire Hydrant	22.06	25.00	5.52
WHV.002076	0	Fire Hydrant	22.06	25.00	5.52
WHV.002077	0	Fire Hydrant	22.06	25.00	5.52
WHV.002078	0	Fire Hydrant	22.06	25.00	5.52
WHV.002079	0	Fire Hydrant	22.06	25.00	5.52
WHV.002089	0	Fire Hydrant	22.06	25.00	5.52
WHV.002090	0	Fire Hydrant	22.06	25.00	5.52
WHV.002092	0	Fire Hydrant	22.06	25.00	5.52
WHV.002093	0	Fire Hydrant	22.06	25.00	5.52
WHV.002112	0	Fire Hydrant	22.06	25.00	5.52
WHV.002113	0	Fire Hydrant	22.06	25.00	5.52
WHV.002114	0	Fire Hydrant	22.06	25.00	5.52
WHV.002115	0	Fire Hydrant	22.06	25.00	5.52
WHV.002116	0	Fire Hydrant	22.06	25.00	5.52
WHV.002117	0	Fire Hydrant	22.06	25.00	5.52
WHV.002118	0	Fire Hydrant	22.06	25.00	5.52
WHV.002122	0	Fire Hydrant	22.06	25.00	5.52
WHV.002123	0	Fire Hydrant	22.06	25.00	5.52
WHV.002124	0	Fire Hydrant	22.06	25.00	5.52
WHV.002129	0	Fire Hydrant	22.06	25.00	5.52
WHV.002493	0	Fire Hydrant	22.06	25.00	5.52
WHV.002494	0	Fire Hydrant	22.06	25.00	5.52
WHV.002495	0	Fire Hydrant	22.06	25.00	5.52
WHV.002496	0	Fire Hydrant	22.06	25.00	5.52
WHV.002497	0	Fire Hydrant	22.06	25.00	5.52
WHV.002498	0	Fire Hydrant	22.06	25.00	5.52
WHV.002499	0	Fire Hydrant	22.06	25.00	5.52
SMH.055041	0	Sewer MH >=1.5m deep: Node R1a/4b	54.12	10.00	5.41
SMH.055042	0	Sewer MH >=1.5m deep: Node R1a1/1a	54.12	10.00	5.41
SMH.055043	0	Sewer MH >=1.5m deep: Node R1a1/1b	54.12	10.00	5.41
SMH.055044	0	Sewer MH >=1.5m deep: Node R1a1a/4a	54.12	10.00	5.41
SMH.055045	0	Sewer MH >=1.5m deep: Node R1a1a/4b	54.12	10.00	5.41
SMH.076646	0	Sewer MH <1.5m deep: Node R4a2/6	54.12	10.00	5.41
SMH.076647	0	Sewer MH <1.5m deep: Node R4a2/5	54.12	10.00	5.41
SMH.076648	0	Sewer MH <1.5m deep: Node R4a2/4	54.12	10.00	5.41
SMH.076649	0	Sewer MH <1.5m deep: Node R4a2/7	54.12	10.00	5.41
SMH.052712	0	Sewer MH <1.5m deep: Node R1a1a/2	52.89	10.00	5.29
SMH.052714	0	Sewer MH <1.5m deep: Node R1a1a/1	52.89	10.00	5.29
SMH.052715	0	Sewer MH <1.5m deep: Node R1a1a/4	52.89	10.00	5.29
SMH.052716	0	Sewer MH <1.5m deep: Node R1a1a/5	52.89	10.00	5.29
SMH.052717	0	Sewer MH <1.5m deep: Node R1a1a/6	52.89	10.00	5.29
SMH.052718	0	Sewer MH <1.5m deep: Node R1a1a/8	52.89	10.00	5.29
SMH.052721	0	Sewer MH <1.5m deep: Node R1a1a/10	52.89	10.00	5.29
SMH.052722	0	Sewer MH <1.5m deep: Node R1a1a/11	52.89	10.00	5.29
SMH.052723	0	Sewer MH <1.5m deep: Node R1a1a1/1	52.89	10.00	5.29
SMH.052724	0	Sewer MH <1.5m deep: Node R1a1b1/1	52.89	10.00	5.29

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SMH.052726	0	Sewer MH <1.5m deep: Node R1a1b/3	52.89	10.00	5.29
SMH.052727	0	Sewer MH <1.5m deep: Node R1a1b/1	52.89	10.00	5.29
SMH.052729	0	Sewer MH <1.5m deep: Node R1a1d/5	52.89	10.00	5.29
SMH.052730	0	Sewer MH <1.5m deep: Node R1a2/6	52.89	10.00	5.29
SMH.052732	0	Sewer MH <1.5m deep: Node R1a2/2	52.89	10.00	5.29
SMH.052733	0	Sewer MH <1.5m deep: Node R1a2/3	52.89	10.00	5.29
SMH.052735	0	Sewer MH <1.5m deep: Node R1a2/7	52.89	10.00	5.29
SMH.052736	0	Sewer MH <1.5m deep: Node R1a2/4	52.89	10.00	5.29
SMH.052737	0	Sewer MH <1.5m deep: Node R1a2a/1	52.89	10.00	5.29
SMH.052738	0	Sewer MH <1.5m deep: Node R1a2a/2	52.89	10.00	5.29
SMH.052739	0	Sewer MH <1.5m deep: Node R1a2b/2	52.89	10.00	5.29
SMH.052740	0	Sewer MH <1.5m deep: Node R1a2b/1	52.89	10.00	5.29
SMH.052741	0	Sewer MH <1.5m deep: Node R1a3/6	52.89	10.00	5.29
SMH.052742	0	Sewer MH <1.5m deep: Node R1a3/7	52.89	10.00	5.29
SMH.052746	0	Sewer MH <1.5m deep: Node R1a3/4	52.89	10.00	5.29
SMH.052749	0	Sewer MH <1.5m deep: Node R1a3/3	52.89	10.00	5.29
SMH.052750	0	Sewer MH <1.5m deep: Node R1a3/5	52.89	10.00	5.29
SMH.052755	0	Sewer MH <1.5m deep: Node R1a3a/4	52.89	10.00	5.29
SMH.052756	0	Sewer MH <1.5m deep: Node R1a3a/1	52.89	10.00	5.29
SMH.052757	0	Sewer MH <1.5m deep: Node R1a3b/1	52.89	10.00	5.29
SMH.052759	0	Sewer MH <1.5m deep: Node R1a4/2	52.89	10.00	5.29
SMH.052762	0	Sewer MH <1.5m deep: Node R1a4/4	52.89	10.00	5.29
SMH.052766	0	Sewer MH <1.5m deep: Node R1a5/3	52.89	10.00	5.29
SMH.052767	0	Sewer MH <1.5m deep: Node R1a6/1	52.89	10.00	5.29
SMH.052768	0	Sewer MH <1.5m deep: Node R1a6/2	52.89	10.00	5.29
SMH.052769	0	Sewer MH <1.5m deep: Node R1a7/1	52.89	10.00	5.29
SMH.052770	0	Sewer MH <1.5m deep: Node R1a8/3	52.89	10.00	5.29
SMH.052771	0	Sewer MH <1.5m deep: Node R1a8/2	52.89	10.00	5.29
SMH.052772	0	Sewer MH <1.5m deep: Node R1a8/1	52.89	10.00	5.29
SMH.052773	0	Sewer MH <1.5m deep: Node R1a8a1/1	52.89	10.00	5.29
SMH.052774	0	Sewer MH <1.5m deep: Node R1a8a2/1	52.89	10.00	5.29
SMH.052775	0	Sewer MH <1.5m deep: Node R1a8a/2	52.89	10.00	5.29
SMH.052776	0	Sewer MH <1.5m deep: Node R1a8a/3	52.89	10.00	5.29
SMH.052777	0	Sewer MH <1.5m deep: Node R1a8a/4	52.89	10.00	5.29
SMH.052778	0	Sewer MH <1.5m deep: Node R1a8a/5	52.89	10.00	5.29
SMH.052779	0	Sewer MH <1.5m deep: Node R1a8a/6	52.89	10.00	5.29
SMH.052780	0	Sewer MH <1.5m deep: Node R1a8a/1	52.89	10.00	5.29
SMH.052781	0	Sewer MH <1.5m deep: Node R1a9/1	52.89	10.00	5.29
SMH.052782	0	Sewer MH <1.5m deep: Node R1a9/2	52.89	10.00	5.29
SMH.052783	0	Sewer MH <1.5m deep: Node R1b/1	52.89	10.00	5.29
SMH.052784	0	Sewer MH <1.5m deep: Node R1b/2	52.89	10.00	5.29
SMH.052785	0	Sewer MH <1.5m deep: Node R1b/3	52.89	10.00	5.29
SMH.052786	0	Sewer MH <1.5m deep: Node R1b/4	52.89	10.00	5.29
SMH.052789	0	Sewer MH <1.5m deep: Node R1d/2	52.89	10.00	5.29
SMH.052790	0	Sewer MH <1.5m deep: Node R1d/3	52.89	10.00	5.29
SMH.052791	0	Sewer MH <1.5m deep: Node R1d/4	52.89	10.00	5.29
SMH.052792	0	Sewer MH <1.5m deep: Node R1d/5	52.89	10.00	5.29
SMH.052793	0	Sewer MH <1.5m deep: Node R1d/6	52.89	10.00	5.29
SMH.052797	0	Sewer MH <1.5m deep: Node R1d2/1	52.89	10.00	5.29
SMH.052799	0	Sewer MH <1.5m deep: Node R1d3/1	52.89	10.00	5.29
SMH.052806	0	Sewer MH <1.5m deep: Node R1g/2	52.89	10.00	5.29
SMH.052807	0	Sewer MH <1.5m deep: Node R1g/3	52.89	10.00	5.29
SMH.052811	0	Sewer MH <1.5m deep: Node R1g/7	52.89	10.00	5.29
SMH.052812	0	Sewer MH <1.5m deep: Node R1g/8	52.89	10.00	5.29
SMH.052813	0	Sewer MH <1.5m deep: Node R1g1/2	52.89	10.00	5.29
SMH.052816	0	Sewer MH <1.5m deep: Node R1h/1	52.89	10.00	5.29
SMH.052818	0	Sewer MH <1.5m deep: Node R1h/3	52.89	10.00	5.29
SMH.052819	0	Sewer MH <1.5m deep: Node R1h/4	52.89	10.00	5.29
SMH.052820	0	Sewer MH <1.5m deep: Node R1i/12	52.89	10.00	5.29
SMH.052823	0	Sewer MH <1.5m deep: Node R1i/1	52.89	10.00	5.29

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SMH.052829	0	Sewer MH <1.5m deep: Node R1i/7	52.89	10.00	5.29
SMH.052833	0	Sewer MH <1.5m deep: Node R1j/1	52.89	10.00	5.29
SMH.052835	0	Sewer MH <1.5m deep: Node R1k/1	52.89	10.00	5.29
SMH.052836	0	Sewer MH <1.5m deep: Node R1l/1	52.89	10.00	5.29
SMH.052837	0	Sewer MH <1.5m deep: Node R1m/1	52.89	10.00	5.29
SMH.052861	0	Sewer MH <1.5m deep: Node R2a/2	52.89	10.00	5.29
SMH.052865	0	Sewer MH <1.5m deep: Node R2c/2	52.89	10.00	5.29
SMH.052866	0	Sewer MH <1.5m deep: Node R2c/3	52.89	10.00	5.29
SMH.052867	0	Sewer MH <1.5m deep: Node R2c/4	52.89	10.00	5.29
SMH.052869	0	Sewer MH <1.5m deep: Node R2d/1	52.89	10.00	5.29
SMH.052870	0	Sewer MH <1.5m deep: Node R2d/2	52.89	10.00	5.29
SMH.052872	0	Sewer MH <1.5m deep: Node R2d/4	52.89	10.00	5.29
SMH.052873	0	Sewer MH <1.5m deep: Node R2d/5	52.89	10.00	5.29
SMH.052874	0	Sewer MH <1.5m deep: Node R2e/1	52.89	10.00	5.29
SMH.052876	0	Sewer MH <1.5m deep: Node R2e/4	52.89	10.00	5.29
SMH.052877	0	Sewer MH <1.5m deep: Node R2e/5	52.89	10.00	5.29
SMH.052881	0	Sewer MH <1.5m deep: Node R2e/9	52.89	10.00	5.29
SMH.052882	0	Sewer MH <1.5m deep: Node R2f/1	52.89	10.00	5.29
SMH.052884	0	Sewer MH <1.5m deep: Node R2f/3	52.89	10.00	5.29
SMH.052886	0	Sewer MH <1.5m deep: Node R2f/5	52.89	10.00	5.29
SMH.052888	0	Sewer MH <1.5m deep: Node R2f/7	52.89	10.00	5.29
SMH.052889	0	Sewer MH <1.5m deep: Node R2f/7a	52.89	10.00	5.29
SMH.052890	0	Sewer MH <1.5m deep: Node R2f/7b	52.89	10.00	5.29
SMH.052891	0	Sewer MH <1.5m deep: Node R2f/8	52.89	10.00	5.29
SMH.052892	0	Sewer MH <1.5m deep: Node R2g/10	52.89	10.00	5.29
SMH.052893	0	Sewer MH <1.5m deep: Node R2g/1	52.89	10.00	5.29
SMH.052894	0	Sewer MH <1.5m deep: Node R2g/2	52.89	10.00	5.29
SMH.052895	0	Sewer MH <1.5m deep: Node R2g/3	52.89	10.00	5.29
SMH.052897	0	Sewer MH <1.5m deep: Node R2g/5	52.89	10.00	5.29
SMH.052898	0	Sewer MH <1.5m deep: Node R2g/6	52.89	10.00	5.29
SMH.052899	0	Sewer MH <1.5m deep: Node R2g/7	52.89	10.00	5.29
SMH.052900	0	Sewer MH <1.5m deep: Node R2g/8	52.89	10.00	5.29
SMH.052902	0	Sewer MH <1.5m deep: Node R2g1/1	52.89	10.00	5.29
SMH.052904	0	Sewer MH <1.5m deep: Node R2h/2	52.89	10.00	5.29
SMH.052905	0	Sewer MH <1.5m deep: Node R2h/3	52.89	10.00	5.29
SMH.052906	0	Sewer MH <1.5m deep: Node R2h/4	52.89	10.00	5.29
SMH.052907	0	Sewer MH <1.5m deep: Node R2h/5	52.89	10.00	5.29
SMH.052909	0	Sewer MH <1.5m deep: Node R2h/7	52.89	10.00	5.29
SMH.052910	0	Sewer MH <1.5m deep: Node R2h/8	52.89	10.00	5.29
SMH.052911	0	Sewer MH <1.5m deep: Node R2h/9	52.89	10.00	5.29
SMH.052912	0	Sewer MH <1.5m deep: Node R2h1/4	52.89	10.00	5.29
SMH.052916	0	Sewer MH <1.5m deep: Node R2h2/1	52.89	10.00	5.29
SMH.052920	0	Sewer MH <1.5m deep: Node R2i/4	52.89	10.00	5.29
SMH.052921	0	Sewer MH <1.5m deep: Node R2i/5	52.89	10.00	5.29
SMH.052924	0	Sewer MH <1.5m deep: Node R2k/1	52.89	10.00	5.29
SMH.052925	0	Sewer MH <1.5m deep: Node R2k/2	52.89	10.00	5.29
SMH.052926	0	Sewer MH <1.5m deep: Node R2k/3	52.89	10.00	5.29
SMH.052927	0	Sewer MH <1.5m deep: Node R2k/4	52.89	10.00	5.29
SMH.052945	0	Sewer MH <1.5m deep: Node R4a1/1	52.89	10.00	5.29
SMH.052950	0	Sewer MH <1.5m deep: Node R5/1	52.89	10.00	5.29
SMH.052951	0	Sewer MH <1.5m deep: Node R5/2	52.89	10.00	5.29
SMH.052952	0	Sewer MH <1.5m deep: Node R5/3	52.89	10.00	5.29
SMH.052953	0	Sewer MH <1.5m deep: Node R5/4	52.89	10.00	5.29
SMH.052954	0	Sewer MH <1.5m deep: Node R5/5	52.89	10.00	5.29
SMH.052955	0	Sewer MH <1.5m deep: Node R5a/10	52.89	10.00	5.29
SMH.052956	0	Sewer MH <1.5m deep: Node R5a/11	52.89	10.00	5.29
SMH.052957	0	Sewer MH <1.5m deep: Node R5a/12	52.89	10.00	5.29
SMH.052958	0	Sewer MH <1.5m deep: Node R5a/13	52.89	10.00	5.29
SMH.052959	0	Sewer MH <1.5m deep: Node R5a/1	52.89	10.00	5.29
SMH.052960	0	Sewer MH <1.5m deep: Node R5a/2	52.89	10.00	5.29

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SMH.052961	0	Sewer MH <1.5m deep: Node R5a/3	52.89	10.00	5.29
SMH.052962	0	Sewer MH <1.5m deep: Node R5a/4	52.89	10.00	5.29
SMH.052963	0	Sewer MH <1.5m deep: Node R5a/5	52.89	10.00	5.29
SMH.052964	0	Sewer MH <1.5m deep: Node R5a/6	52.89	10.00	5.29
SMH.052965	0	Sewer MH <1.5m deep: Node R5a/7	52.89	10.00	5.29
SMH.052966	0	Sewer MH <1.5m deep: Node R5a/8	52.89	10.00	5.29
SMH.052967	0	Sewer MH <1.5m deep: Node R5a/9	52.89	10.00	5.29
SMH.052968	0	Sewer MH <1.5m deep: Node R5a1/2	52.89	10.00	5.29
SMH.052969	0	Sewer MH <1.5m deep: Node R5a1/1	52.89	10.00	5.29
SMH.052970	0	Sewer MH <1.5m deep: Node R5a2/4	52.89	10.00	5.29
SMH.052971	0	Sewer MH <1.5m deep: Node R5a2/5	52.89	10.00	5.29
SMH.052972	0	Sewer MH <1.5m deep: Node R5a2/6	52.89	10.00	5.29
SMH.052973	0	Sewer MH <1.5m deep: Node R5a2/3	52.89	10.00	5.29
SMH.052974	0	Sewer MH <1.5m deep: Node R5a2/2	52.89	10.00	5.29
SMH.052975	0	Sewer MH <1.5m deep: Node R5a2/1	52.89	10.00	5.29
SMH.052976	0	Sewer MH <1.5m deep: Node R5a2a/2	52.89	10.00	5.29
SMH.052977	0	Sewer MH <1.5m deep: Node R5a2a/1	52.89	10.00	5.29
SMH.052978	0	Sewer MH <1.5m deep: Node R5a3/1	52.89	10.00	5.29
SMH.052979	0	Sewer MH <1.5m deep: Node R5a3/2	52.89	10.00	5.29
SMH.052980	0	Sewer MH <1.5m deep: Node R5a4/1	52.89	10.00	5.29
SMH.052981	0	Sewer MH <1.5m deep: Node R5a5/1	52.89	10.00	5.29
SMH.052982	0	Sewer MH <1.5m deep: Node R5a6/1	52.89	10.00	5.29
SMH.052983	0	Sewer MH <1.5m deep: Node R5a7/1	52.89	10.00	5.29
SMH.052984	0	Sewer MH <1.5m deep: Node R5b/1	52.89	10.00	5.29
SMH.052985	0	Sewer MH <1.5m deep: Node R5b/2	52.89	10.00	5.29
SMH.052986	0	Sewer MH <1.5m deep: Node R5b/3	52.89	10.00	5.29
SMH.052987	0	Sewer MH <1.5m deep: Node R5b/4	52.89	10.00	5.29
SMH.052988	0	Sewer MH <1.5m deep: Node R5b/5	52.89	10.00	5.29
SMH.052989	0	Sewer MH <1.5m deep: Node R5b/6	52.89	10.00	5.29
SMH.052990	0	Sewer MH <1.5m deep: Node R5b/7	52.89	10.00	5.29
SMH.052991	0	Sewer MH <1.5m deep: Node R5b1/6	52.89	10.00	5.29
SMH.052992	0	Sewer MH <1.5m deep: Node R5b1/7	52.89	10.00	5.29
SMH.052993	0	Sewer MH <1.5m deep: Node R5b1/1	52.89	10.00	5.29
SMH.052994	0	Sewer MH <1.5m deep: Node R5b1/2	52.89	10.00	5.29
SMH.052995	0	Sewer MH <1.5m deep: Node R5b1/3	52.89	10.00	5.29
SMH.052996	0	Sewer MH <1.5m deep: Node R5b1/5	52.89	10.00	5.29
SMH.052997	0	Sewer MH <1.5m deep: Node R5b1/4	52.89	10.00	5.29
SMH.052998	0	Sewer MH <1.5m deep: Node R5c/1	52.89	10.00	5.29
SMH.052999	0	Sewer MH <1.5m deep: Node R5c/2	52.89	10.00	5.29
SMH.053000	0	Sewer MH <1.5m deep: Node R5d/1	52.89	10.00	5.29
SMH.053001	0	Sewer MH <1.5m deep: Node R5e/1	52.89	10.00	5.29
SMH.053002	0	Sewer MH <1.5m deep: Node R5e/2	52.89	10.00	5.29
SMH.053003	0	Sewer MH <1.5m deep: Node R5e/3	52.89	10.00	5.29
SMH.053004	0	Sewer MH <1.5m deep: Node R5e/4	52.89	10.00	5.29
SMH.053005	0	Sewer MH <1.5m deep: Node R5e/5	52.89	10.00	5.29
SMH.053006	0	Sewer MH <1.5m deep: Node R5e/6	52.89	10.00	5.29
SMH.053007	0	Sewer MH <1.5m deep: Node R5e/7	52.89	10.00	5.29
SMH.053008	0	Sewer MH <1.5m deep: Node R5e/8	52.89	10.00	5.29
SMH.053009	0	Sewer MH <1.5m deep: Node R5e1/2	52.89	10.00	5.29
SMH.053010	0	Sewer MH <1.5m deep: Node R5e1/1	52.89	10.00	5.29
SMH.053011	0	Sewer MH <1.5m deep: Node R5e2/1	52.89	10.00	5.29
SMH.053012	0	Sewer MH <1.5m deep: Node R6/1	52.89	10.00	5.29
SMH.053013	0	Sewer MH <1.5m deep: Node R6/2	52.89	10.00	5.29
SMH.053014	0	Sewer MH <1.5m deep: Node R6/3	52.89	10.00	5.29
SMH.053015	0	Sewer MH <1.5m deep: Node R6/4	52.89	10.00	5.29
SMH.053016	0	Sewer MH <1.5m deep: Node R6/5	52.89	10.00	5.29
SMH.053017	0	Sewer MH <1.5m deep: Node R6/6	52.89	10.00	5.29
SMH.054232	0	Sewer MH <1.5m deep: Node	52.89	10.00	5.29
SMH.055046	0	Sewer MH >=1.5m deep: Node R4/1	52.89	10.00	5.29
SMH.055048	0	Sewer MH >=1.5m deep: Node R4/3	52.89	10.00	5.29

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SMH.055050	0	Sewer MH >=1.5m deep: Node R4/4	52.89	10.00	5.29
SMH.055053	0	Sewer MH >=1.5m deep: Node R4/5	52.89	10.00	5.29
SMH.055058	0	Sewer MH >=1.5m deep: Node R4/7	52.89	10.00	5.29
SMH.055060	0	Sewer MH >=1.5m deep: Node R4/8	52.89	10.00	5.29
SMH.055062	0	Sewer MH >=1.5m deep: Node R4a/2	52.89	10.00	5.29
SMH.055063	0	Sewer MH >=1.5m deep: Node R4a/3	52.89	10.00	5.29
SMH.055064	0	Sewer MH >=1.5m deep: Node R4a/4	52.89	10.00	5.29
SMH.055065	0	Sewer MH >=1.5m deep: Node R4a/5	52.89	10.00	5.29
SMH.055066	0	Sewer MH >=1.5m deep: Node R4a2/1	52.89	10.00	5.29
SMH.055067	0	Sewer MH >=1.5m deep: Node R4a2/2	52.89	10.00	5.29
SMH.055068	0	Sewer MH >=1.5m deep: Node R4a2/3	52.89	10.00	5.29
SMH.055069	0	Sewer MH >=1.5m deep: Node R4a2/4	52.89	10.00	5.29
SMH.055070	0	Sewer MH >=1.5m deep: Node R4a2a/01	52.89	10.00	5.29
SMH.055071	0	Sewer MH >=1.5m deep: Node R4a2a/02	52.89	10.00	5.29
SMH.055072	0	Sewer MH >=1.5m deep: Node R4b/1	52.89	10.00	5.29
WMA.009427	0	Water 250 PVC: Nodes -	51.75	10.00	5.17
WMA.009431	0	Water 250 PVC: Nodes 116A - 116B	51.75	10.00	5.17
SMH.048267	0	Sewer IO: Node R1a/4a	51.66	10.00	5.17
WMA.009412	0	Water 200 PVC: Nodes -	51.51	10.00	5.15
SMA.058574	0	Sewer 150 <1.5m deep: Nodes R1a1a/11 - R1a1a/10	49.93	10.00	4.99
SMA.058575	0	Sewer 150 <1.5m deep: Nodes R1a1a/2 - R1a1a/1	49.93	10.00	4.99
SMA.058576	0	Sewer 150 <1.5m deep: Nodes R1a1a/1 - R1a1/1	49.93	10.00	4.99
SMA.058577	0	Sewer 150 <1.5m deep: Nodes R1a1a/10 - R1a1a/9	49.93	10.00	4.99
SMA.058578	0	Sewer 150 <1.5m deep: Nodes R1a1a/3 - R1a1a/2	49.93	10.00	4.99
SMA.058579	0	Sewer 150 <1.5m deep: Nodes R1a1a/7 - R1a1a/6	49.93	10.00	4.99
SMA.058596	0	Sewer LongLife 100-375 <1.5m: Nodes R1a2a/2 - R1a2a/1	49.93	10.00	4.99
SMA.058630	0	Sewer 150 <1.5m deep: Nodes R1a8/3 - R1a8/2	49.93	10.00	4.99
SMA.058635	0	Sewer 150 <1.5m deep: Nodes R1a8a2/1 - R1a8a/1	49.93	10.00	4.99
SMA.058713	0	Sewer 150 <1.5m deep: Nodes R2a/2 - R2a/1	49.93	10.00	4.99
SMA.058773	0	Sewer 150 <1.5m deep: Nodes R2i/4 - R2i/3	49.93	10.00	4.99
SMA.058825	0	Sewer 150 <1.5m deep: Nodes R5a2/6 - R5a2/5	49.93	10.00	4.99
SMA.058826	0	Sewer 150 <1.5m deep: Nodes R5a2a/1 - R5a2/4	49.93	10.00	4.99
SMA.058827	0	Sewer 150 <1.5m deep: Nodes R5a2a/2 - R5a2a/1	49.93	10.00	4.99
SMA.058830	0	Sewer 150 <1.5m deep: Nodes R5a3/2 - R5a3/1	49.93	10.00	4.99
SMA.058840	0	Sewer 150 <1.5m deep: Nodes R5b/5 - R5b/4	49.93	10.00	4.99
SMA.058856	0	Sewer 150 <1.5m deep: Nodes R5e/5 - R5e/4	49.93	10.00	4.99
SMA.061453	0	Sewer 150 >=1.5m deep: Nodes R1a/4b - R1a1/1a	49.93	10.00	4.99
SMA.061467	0	Sewer LongLife 100-375 >=1.5m: Nodes R4a1/1 - R4a/2	49.93	10.00	4.99
SMA.061468	0	Sewer LongLife 100-375 >=1.5m: Nodes R4a2/1 - R4a/3	49.93	10.00	4.99
SMA.061475	0	Sewer LongLife 100-375 >=1.5m: Nodes R4c/3 - R4c/2	49.93	10.00	4.99
SMA.061476	0	Sewer LongLife 100-375 >=1.5m: Nodes R4c/4 - R4c/3	49.93	10.00	4.99
SMA.076644	0	Sewer 150 <1.5m deep: Nodes R4a2/5 - R4a2/4	49.93	10.00	4.99
SMA.055289	0	Sewer 100 <1.5m deep: Nodes R5a/13a - R5a/13	47.45	10.00	4.74
SMA.055290	0	Sewer 100 <1.5m deep: Nodes R5a/13b - R5a/13	47.45	10.00	4.74
SMA.055291	0	Sewer 100 <1.5m deep: Nodes R5a1/2b - R5a1/2	47.45	10.00	4.74
SMA.055292	0	Sewer 100 <1.5m deep: Nodes R5a1/2a - R5a1/2	47.45	10.00	4.74
SMA.055293	0	Sewer 100 <1.5m deep: Nodes R5a3/2a - R5a3/2	47.45	10.00	4.74
SMA.058533	0	Sewer 150 <1.5m deep: Nodes R1a/2 - R1a8/1	47.45	10.00	4.74
SMA.058568	0	Sewer 150 <1.5m deep: Nodes R1a1a/5 - R1a1a/4b	47.45	10.00	4.74
SMA.058569	0	Sewer 150 <1.5m deep: Nodes R1a1a/4b - R1a1a/4a	47.45	10.00	4.74
SMA.058570	0	Sewer 150 <1.5m deep: Nodes R1a1a/4a - R1a1a/4	47.45	10.00	4.74
SMA.058571	0	Sewer 150 <1.5m deep: Nodes R1a1a/4 - R1a1a/4	47.45	10.00	4.74
SMA.058572	0	Sewer 150 <1.5m deep: Nodes R1a1a/5 - R1a1a/4	47.45	10.00	4.74
SMA.058573	0	Sewer 150 <1.5m deep: Nodes R1a1a/6 - R1a1a/5	47.45	10.00	4.74
SMA.058580	0	Sewer 150 <1.5m deep: Nodes R1a1a/9 - R1a1a/8	47.45	10.00	4.74
SMA.058581	0	Sewer 150 <1.5m deep: Nodes R1a1a/8 - R1a1a/7	47.45	10.00	4.74
SMA.058582	0	Sewer 150 <1.5m deep: Nodes R1a1a1/1 - R1a1a/6	47.45	10.00	4.74
SMA.058629	0	Sewer 150 <1.5m deep: Nodes R1a8/1 - R1a8/2	47.45	10.00	4.74
SMA.058631	0	Sewer 150 <1.5m deep: Nodes R1a8a/4 - R1a8a/3	47.45	10.00	4.74
SMA.058632	0	Sewer 150 <1.5m deep: Nodes R1a8a/5 - R1a8a/4	47.45	10.00	4.74

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SMA.058633	0	Sewer 150 <1.5m deep: Nodes R1a8a/6 - R1a8a/5	47.45	10.00	4.74
SMA.058634	0	Sewer 150 <1.5m deep: Nodes R1a8a1/1 - R1a8a/1	47.45	10.00	4.74
SMA.058672	0	Sewer 150 <1.5m deep: Nodes R1h/2 - R1h/1	47.45	10.00	4.74
SMA.058742	0	Sewer 150 <1.5m deep: Nodes R2f/7a - R2f/7	47.45	10.00	4.74
SMA.058743	0	Sewer 150 <1.5m deep: Nodes R2f/7b - R2f/7a	47.45	10.00	4.74
SMA.058770	0	Sewer 150 <1.5m deep: Nodes R2h2/1 - R2h/2	47.45	10.00	4.74
SMA.058804	0	Sewer 150 <1.5m deep: Nodes R5a/10 - R5a/9	47.45	10.00	4.74
SMA.058805	0	Sewer 150 <1.5m deep: Nodes R5a/11 - R5a/10	47.45	10.00	4.74
SMA.058806	0	Sewer 150 <1.5m deep: Nodes R5a/12 - R5a/11	47.45	10.00	4.74
SMA.058807	0	Sewer 150 <1.5m deep: Nodes R5a/13 - R5a/12	47.45	10.00	4.74
SMA.058808	0	Sewer 150 <1.5m deep: Nodes R5a/2 - R5a/1	47.45	10.00	4.74
SMA.058809	0	Sewer 150 <1.5m deep: Nodes R5a/3 - R5a/2	47.45	10.00	4.74
SMA.058810	0	Sewer 150 <1.5m deep: Nodes R5a/4 - R5a/3	47.45	10.00	4.74
SMA.058811	0	Sewer 150 <1.5m deep: Nodes R5a/5 - R5a/4	47.45	10.00	4.74
SMA.058812	0	Sewer 150 <1.5m deep: Nodes R5a/6 - R5a/5	47.45	10.00	4.74
SMA.058813	0	Sewer 150 <1.5m deep: Nodes R5a/7 - R5a/6	47.45	10.00	4.74
SMA.058814	0	Sewer 150 <1.5m deep: Nodes R5a/8 - R5a/7	47.45	10.00	4.74
SMA.058815	0	Sewer 150 <1.5m deep: Nodes R5a/9 - R5a/8	47.45	10.00	4.74
SMA.058817	0	Sewer 150 <1.5m deep: Nodes R5a1/2 - R5a1/1	47.45	10.00	4.74
SMA.058818	0	Sewer 150 <1.5m deep: Nodes R5a1/3 - R5a1/2	47.45	10.00	4.74
SMA.058819	0	Sewer 150 <1.5m deep: Nodes R5a1/4 - R5a1/2	47.45	10.00	4.74
SMA.058820	0	Sewer 150 <1.5m deep: Nodes R5a2/1 - R5a/1	47.45	10.00	4.74
SMA.058821	0	Sewer 150 <1.5m deep: Nodes R5a2/2 - R5a2/1	47.45	10.00	4.74
SMA.058822	0	Sewer 150 <1.5m deep: Nodes R5a2/3 - R5a2/2	47.45	10.00	4.74
SMA.058823	0	Sewer 150 <1.5m deep: Nodes R5a2/4 - R5a2/3	47.45	10.00	4.74
SMA.058824	0	Sewer 150 <1.5m deep: Nodes R5a2/5 - R5a2/4	47.45	10.00	4.74
SMA.058828	0	Sewer 150 <1.5m deep: Nodes R5a2a/3 - R5a2a/2	47.45	10.00	4.74
SMA.058829	0	Sewer 150 <1.5m deep: Nodes R5a3/1 - R5a/7	47.45	10.00	4.74
SMA.058831	0	Sewer 150 <1.5m deep: Nodes R5a3/3 - R5a3/2	47.45	10.00	4.74
SMA.058832	0	Sewer 150 <1.5m deep: Nodes R5a4/1 - R5a/8	47.45	10.00	4.74
SMA.058833	0	Sewer 150 <1.5m deep: Nodes R5a5/1 - R5a/9	47.45	10.00	4.74
SMA.058834	0	Sewer 150 <1.5m deep: Nodes R5a6/1 - R5a/10	47.45	10.00	4.74
SMA.058835	0	Sewer 150 <1.5m deep: Nodes R5a7/1 - R5a/12	47.45	10.00	4.74
SMA.058836	0	Sewer 150 <1.5m deep: Nodes R5b/1 - R5/2	47.45	10.00	4.74
SMA.058837	0	Sewer 150 <1.5m deep: Nodes R5b/2 - R5b/1	47.45	10.00	4.74
SMA.058838	0	Sewer 150 <1.5m deep: Nodes R5b/3 - R5b/2	47.45	10.00	4.74
SMA.058839	0	Sewer 150 <1.5m deep: Nodes R5b/4 - R5b/3	47.45	10.00	4.74
SMA.058841	0	Sewer 150 <1.5m deep: Nodes R5b/6 - R5b/5	47.45	10.00	4.74
SMA.058842	0	Sewer 150 <1.5m deep: Nodes R5b/7 - R5b/6	47.45	10.00	4.74
SMA.058843	0	Sewer 150 <1.5m deep: Nodes R5b1/1 - R5b/3	47.45	10.00	4.74
SMA.058844	0	Sewer 150 <1.5m deep: Nodes R5b1/2 - R5b1/1	47.45	10.00	4.74
SMA.058845	0	Sewer 150 <1.5m deep: Nodes R5b1/3 - R85b1/2	47.45	10.00	4.74
SMA.058846	0	Sewer 150 <1.5m deep: Nodes R5b1/5 - R5b1/4	47.45	10.00	4.74
SMA.058847	0	Sewer 150 <1.5m deep: Nodes R5b1/6 - R5b1/5	47.45	10.00	4.74
SMA.058848	0	Sewer 150 <1.5m deep: Nodes R5b1/7 - R5b1/6	47.45	10.00	4.74
SMA.058849	0	Sewer 150 <1.5m deep: Nodes R5c/1 - R5/3	47.45	10.00	4.74
SMA.058850	0	Sewer 150 <1.5m deep: Nodes R5c/2 - R5c/1	47.45	10.00	4.74
SMA.058851	0	Sewer 150 <1.5m deep: Nodes R5d/1 - R5/4	47.45	10.00	4.74
SMA.058852	0	Sewer 150 <1.5m deep: Nodes R5e/1 - R5a/2	47.45	10.00	4.74
SMA.058853	0	Sewer 150 <1.5m deep: Nodes R5e/2 - R5e/1	47.45	10.00	4.74
SMA.058854	0	Sewer 150 <1.5m deep: Nodes R5e/3 - R5e/2	47.45	10.00	4.74
SMA.058855	0	Sewer 150 <1.5m deep: Nodes R5e/4 - R5e/3	47.45	10.00	4.74
SMA.058857	0	Sewer 150 <1.5m deep: Nodes R5e/6 - R5e/5	47.45	10.00	4.74
SMA.058858	0	Sewer 150 <1.5m deep: Nodes R5e/7 - R5e/6	47.45	10.00	4.74
SMA.058859	0	Sewer 150 <1.5m deep: Nodes R5e/8 - R5e/7	47.45	10.00	4.74
SMA.058860	0	Sewer 150 <1.5m deep: Nodes R5e1/1 - R5e/4	47.45	10.00	4.74
SMA.058861	0	Sewer 150 <1.5m deep: Nodes R5e1/2 - R5e1/1	47.45	10.00	4.74
SMA.058862	0	Sewer 150 <1.5m deep: Nodes R5e2/1 - R5e/5	47.45	10.00	4.74
SMA.059766	0	Sewer 150 <1.5m deep: Nodes Endcap - R5a2a/2	47.45	10.00	4.74
SMA.061469	0	Sewer 150 >=1.5m deep: Nodes R4a2/2 - R4a2/1	47.45	10.00	4.74

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SMA.061470	0	Sewer 150 >=1.5m deep: Nodes R4a2/3 - R4a2/2	47.45	10.00	4.74
SMA.061472	0	Sewer LongLife 100-375 >=1.5m: Nodes R4b/1 - R4a/1	47.45	10.00	4.74
SMA.061473	0	Sewer LongLife 100-375 >=1.5m: Nodes R4c/1 - R4/2	47.45	10.00	4.74
SMA.061474	0	Sewer LongLife 100-375 >=1.5m: Nodes R4c/2 - R4c/1	47.45	10.00	4.74
SMA.061477	0	Sewer LongLife 100-375 >=1.5m: Nodes R4c/5 - R4c/4	47.45	10.00	4.74
SMA.061478	0	Sewer 150 >=1.5m deep: Nodes R4c/6 - R4c/5	47.45	10.00	4.74
SMA.061479	0	Sewer LongLife 100-375 >=1.5m: Nodes R4c1/1 - R4c/2	47.45	10.00	4.74
SMA.061480	0	Sewer LongLife 100-375 >=1.5m: Nodes R4c2/1 - R4c/3	47.45	10.00	4.74
SMA.061481	0	Sewer LongLife 100-375 >=1.5m: Nodes R4c3/1 - R4c/4	47.45	10.00	4.74
SMA.061482	0	Sewer 150 >=1.5m deep: Nodes R4c4/1 - R4c/5	47.45	10.00	4.74
SMA.076642	0	Sewer 150 <1.5m deep: Nodes R4a2/7 - R4a2/6	47.45	10.00	4.74
SMA.076643	0	Sewer 150 <1.5m deep: Nodes R4a2/6 - R4a2/5	47.45	10.00	4.74
SMA.076645	0	Sewer 150 <1.5m deep: Nodes R4a2/4 - R4a2/3	47.45	10.00	4.74
SVC.G1300167	0	Sewerage House Connection Branch - 100 mm	42.49	10.00	4.25
SVC.G1100366	0	Sewerage House Connection Branch - 100 mm	42.49	10.00	4.25
SVC.G1100363	0	Sewerage House Connection Branch - 100 mm	42.49	10.00	4.25
SVC.G1202499	0	Sewerage House Connection Branch - 100 mm	42.49	10.00	4.25
SVC.G1001913	0	Sewerage House Connection Branch - 100 mm	42.21	10.00	4.22
SVC.G1100341	0	Sewerage House Connection Branch - 100 mm	42.21	10.00	4.22
SVC.G1201400	0	Sewerage House Connection Branch - 100 mm	42.21	10.00	4.22
SVC.G1201406	0	Sewerage House Connection Branch - 100 mm	42.21	10.00	4.22
SVC.G1001370	0	Sewerage House Connection Branch - 100 mm	42.21	10.00	4.22
SVC.G1200321	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000012	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001296	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001626	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001702	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000013	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001265	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201116	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001438	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001409	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000032	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000030	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000046	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002095	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202440	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1502361	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1501353	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001820	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001107	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601468	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001941	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601532	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401305	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202511	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002058	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002052	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002051	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002054	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201414	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001378	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200402	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201403	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201397	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001620	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201401	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201412	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201307	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201407	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1201396	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200428	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001962	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202508	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001372	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201415	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001375	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001779	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001373	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001966	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201398	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001777	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001775	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202473	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200034	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001953	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202474	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200036	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002042	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200396	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200401	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200400	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202495	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202494	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202472	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001385	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200399	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202490	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202483	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001624	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001382	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200471	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200406	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200470	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001389	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001915	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001388	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202477	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200466	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200474	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001912	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001832	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001806	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001827	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200267	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200266	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001104	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200247	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601461	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001836	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200441	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001837	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200281	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200278	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000108	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001785	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001834	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001830	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200364	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1102188	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1002085	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200371	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200017	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002039	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100294	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200014	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401494	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001838	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401510	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002012	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.M0010447	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200311	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002034	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100203	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002035	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001839	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002032	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201046	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1301563	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.M42256	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001290	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001809	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100360	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100361	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200326	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1501214	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601479	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001704	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600763	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.M07004091	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600763	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.M07004091	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200481	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200270	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001706	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1400929	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001947	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001109	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000123	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001101	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200258	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1301404	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200476	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001106	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1502317	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002214	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001741	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200314	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001740	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001743	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001742	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001747	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002007	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002006	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202435	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002004	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202426	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000127	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002002	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200272	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001794	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200277	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1201801	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200183	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200376	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1102108	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200186	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.M89722835	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700026	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001796	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001790	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1102057	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401650	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202444	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202422	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001433	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200136	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100135	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100137	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001204	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001208	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100142	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100338	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001432	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001299	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100336	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100485	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100095	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100134	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100102	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001292	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001436	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001292	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001436	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001434	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001687	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001683	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001402	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001404	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001405	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001407	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001406	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001295	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001724	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001727	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1501737	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001268	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001435	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100353	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001431	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100334	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001437	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001202	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100339	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200301	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001267	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200215	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001261	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001263	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001269	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001266	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001929	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001841	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001842	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1601354	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000107	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600926	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600924	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600261	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700276	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800658	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202445	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200978	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200979	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200787	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200137	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200980	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200973	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200789	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800340	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200138	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800092	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200975	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500175	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200974	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200139	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200135	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200981	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601551	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000102	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000045	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000031	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000027	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700006	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700031	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600379	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202428	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202431	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001940	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001942	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202429	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200472	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001945	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800174	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1102208	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1501712	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200473	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001949	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001103	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001703	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001105	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202467	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401892	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401516	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202433	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401890	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401420	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500593	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200254	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200478	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202452	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1502046	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1502652	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1502045	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1200994	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1101930	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600801	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700032	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800202	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200264	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200269	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500176	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001108	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800461	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600925	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601382	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600928	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600927	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700160	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401440	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401438	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1003376	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601021	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601020	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601028	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700159	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601270	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601268	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601464	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202461	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1502678	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401497	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800009	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1300161	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601036	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600340	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601022	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600402	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600283	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600282	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600339	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600347	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600345	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600401	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600348	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600280	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601024	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600399	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202449	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600403	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600279	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600341	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600346	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601025	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600400	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600344	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601045	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601018	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601015	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601364	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601288	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601016	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601044	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601017	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1601289	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601014	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601047	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600287	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601046	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600284	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600288	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600285	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601048	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700322	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600210	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001705	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200251	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200250	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800565	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200427	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001961	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001773	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001770	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001914	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001701	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001383	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200366	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201140	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001910	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001386	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200468	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1101934	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1101949	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202466	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200469	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200479	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202492	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200443	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200265	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200242	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200450	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200446	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200271	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600267	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200318	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200243	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200262	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001952	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001625	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600161	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001918	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202485	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700133	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1502395	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202480	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202496	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1102217	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200405	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200398	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202479	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700030	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200395	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200393	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001381	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1200411	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202478	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201136	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1400113	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800390	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1300347	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800538	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200407	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601287	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001959	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001917	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001384	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700162	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200467	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700235	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800550	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200273	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001916	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001911	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700280	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200462	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200463	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1502643	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600162	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200397	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200464	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001951	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001950	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002059	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401355	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002059	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401355	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601164	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1101943	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200423	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700336	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002044	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002041	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002048	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002045	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200037	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600302	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600303	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200035	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002043	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200032	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200426	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200038	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800319	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002046	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001776	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001960	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201147	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700004	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200033	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200392	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002049	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001955	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002040	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200409	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202486	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002047	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1001781	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001958	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002083	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002080	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800357	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800358	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600293	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202484	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001957	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001954	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500171	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500440	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601227	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001965	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001963	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201289	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202342	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200425	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200431	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001371	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001969	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001376	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202510	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200430	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202497	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001374	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002057	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002053	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201377	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202500	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401414	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202509	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002050	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500173	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202549	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100113	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002056	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001772	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200404	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600069	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201404	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001377	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001628	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001629	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201409	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100369	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100364	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001771	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001774	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001964	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200429	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201402	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800423	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202502	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100371	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202503	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202501	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002055	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001623	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001622	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1200453	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201405	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001967	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001379	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1502654	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800027	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200461	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200458	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200424	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601004	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100115	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800303	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100368	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200456	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200422	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200460	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201399	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600803	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001778	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001387	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001919	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600800	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500431	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100121	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200465	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800360	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202488	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202470	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201379	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202489	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202471	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1003224	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601373	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201109	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601384	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500179	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601337	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700033	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1300062	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700323	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700344	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202450	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700029	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700134	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600752	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800338	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202430	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200260	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600802	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202454	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001744	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001948	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200475	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600799	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202493	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200134	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001200	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001201	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800494	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800361	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1800493	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001203	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001207	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001206	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800492	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100357	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800496	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100362	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1102119	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500591	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200783	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100136	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200126	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200784	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100141	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200127	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100355	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001294	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800498	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800499	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001720	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401418	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800564	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001686	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800563	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200122	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800562	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800501	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800497	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800520	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001688	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001728	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001684	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001726	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100354	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001685	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100333	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200131	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001680	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001297	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200300	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100359	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100358	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401995	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200123	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200130	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200790	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200782	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700107	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800464	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100098	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800463	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100096	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200786	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100099	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800495	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100093	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001291	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001682	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201283	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1200785	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100094	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100138	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200791	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100139	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001430	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200125	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002030	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001408	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401474	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100335	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200129	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800266	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001439	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200788	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800108	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001262	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100486	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202643	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800384	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001992	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100301	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100337	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1101925	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100340	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200976	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200977	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200132	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201166	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600008	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601519	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001700	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600979	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201276	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700357	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001709	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200255	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202427	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001100	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001746	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1501817	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202451	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600130	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200313	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001745	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001708	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1102131	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201295	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200187	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001707	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001748	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001802	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001749	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1003429	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001805	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200190	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800305	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001823	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001829	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1003423	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1001807	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001828	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001792	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001799	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202434	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601228	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001798	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201191	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200447	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002005	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202453	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200182	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001821	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001784	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200230	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100488	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200225	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200237	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002033	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100299	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200229	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600362	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401445	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600363	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100300	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500177	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002031	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002011	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200378	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100298	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100204	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202439	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200377	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800391	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001995	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200363	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001998	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002038	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200370	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200365	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002018	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200368	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001831	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200369	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200241	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600885	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001997	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800285	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200015	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200019	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200235	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500178	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002015	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500606	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201123	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200279	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600433	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202438	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600432	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200302	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1601042	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100492	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001786	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200227	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200236	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100489	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100208	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200362	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100491	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100295	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200238	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202459	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200439	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200239	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001991	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000115	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100206	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200231	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001994	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100293	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800286	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001833	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201124	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200445	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001996	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201119	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200222	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200374	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200367	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600140	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100207	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200381	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100205	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200373	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001993	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200224	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401329	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800359	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200380	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002088	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200375	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1102142	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100211	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500172	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500180	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201112	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800422	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200303	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1003200	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200448	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600272	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001803	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001788	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600286	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100297	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201120	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401514	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200233	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200240	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201122	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1601367	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001660	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201115	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1501349	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1501350	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201125	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200316	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201111	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200451	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100212	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202457	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200319	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100296	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100210	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700321	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700343	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700324	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700320	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200379	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200312	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800018	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600018	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001783	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001789	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001800	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200315	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201141	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200320	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700028	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401328	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700028	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401328	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201108	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201117	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200232	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200234	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202437	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201110	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100302	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002017	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200133	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201118	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600980	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200309	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600429	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201047	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200310	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800525	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002019	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100342	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200307	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600107	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600371	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200308	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600880	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202425	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200433	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700131	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202442	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202443	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001797	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601454	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1200021	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600171	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600044	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202432	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601453	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202447	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202419	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601310	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002091	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200248	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200249	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202455	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200246	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200244	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202460	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601550	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100484	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001787	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1502044	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200016	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001801	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202436	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000132	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201228	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001822	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001824	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202465	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202464	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202423	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202441	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1102229	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201067	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201066	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200329	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202458	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600337	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200327	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200323	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201113	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200322	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202421	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002240	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1800302	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601371	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200324	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202463	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1100209	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201068	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200325	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202424	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200435	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202446	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001791	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1202420	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200434	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1500174	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002009	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001795	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201802	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200280	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
SVC.G1202418	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200438	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200184	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001825	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002008	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600193	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001793	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200436	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1400934	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002001	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002003	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200432	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200437	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200256	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002000	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200191	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1200189	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601361	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1101969	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601365	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001638	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700164	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1700152	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601019	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601035	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601023	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601034	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1401352	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601038	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600342	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601038	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600342	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601027	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601037	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600281	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1601559	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1600343	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001840	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001927	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000048	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1000028	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001944	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002087	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002086	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002081	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001990	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002084	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002037	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001780	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001999	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002010	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002016	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001782	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002014	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001804	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001598	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1002013	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001826	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1001808	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.G1201121	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
SVC.M1023721	0	Sewerage House Connection Branch - 100 mm	41.93	10.00	4.19
WMA.009230	0	Water 150 PVC: Nodes -	40.62	10.00	4.06

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMA.009266	0	Water 150 PVC: Nodes 157 - 161	40.62	10.00	4.06
WMA.009368	0	Water 150 PVC: Nodes -	40.62	10.00	4.06
WMA.009370	0	Water 150 PVC: Nodes -	40.62	10.00	4.06
WMA.009372	0	Water 150 PVC: Nodes -	40.62	10.00	4.06
WMA.009390	0	Water 150 PVC: Nodes -	39.00	10.00	3.90
WMA.008790	0	Water 100 PVC: Nodes 152 - 160	38.88	10.00	3.89
WMA.008841	0	Water 100 PVC: Nodes 160 - 162	38.88	10.00	3.89
WMA.009059	0	Water 100 PVC: Nodes 158 - 159	38.88	10.00	3.89
WMA.009117	0	Water 100 PVC: Nodes -	38.88	10.00	3.89
WMA.009118	0	Water 100 PVC: Nodes -	38.88	10.00	3.89
WMA.009351	0	Water 150 PVC: Nodes -	38.51	10.00	3.85
WMA.009363	0	Water 150 PVC: Nodes -	38.51	10.00	3.85
WMA.009364	0	Water 150 PVC: Nodes -	38.51	10.00	3.85
WMA.009365	0	Water 150 PVC: Nodes -	38.51	10.00	3.85
WMA.009366	0	Water 150 PVC: Nodes -	38.51	10.00	3.85
WMA.009367	0	Water 150 PVC: Nodes -	38.51	10.00	3.85
WMA.009369	0	Water 150 PVC: Nodes -	38.51	10.00	3.85
WMA.009371	0	Water 150 PVC: Nodes -	38.51	10.00	3.85
WMA.009394	0	Water 150 PVC: Nodes -	38.51	10.00	3.85
WMA.009107	0	Water 100 PVC: Nodes -	37.26	10.00	3.73
WMA.009121	0	Water 100 PVC: Nodes -	37.26	10.00	3.73
WMA.009099	0	Water 100 PVC: Nodes -	36.77	10.00	3.68
WMA.009101	0	Water 100 PVC: Nodes -	36.77	10.00	3.68
WMA.009103	0	Water 100 PVC: Nodes -	36.77	10.00	3.68
WMA.009104	0	Water 100 PVC: Nodes -	36.77	10.00	3.68
WMA.009105	0	Water 100 PVC: Nodes -	36.77	10.00	3.68
WMA.009106	0	Water 100 PVC: Nodes -	36.77	10.00	3.68
WMA.009115	0	Water 100 PVC: Nodes -	36.77	10.00	3.68
WMA.009126	0	Water 100 PVC: Nodes -	36.77	10.00	3.68
WMA.009131	0	Water 100 PVC: Nodes -	36.77	10.00	3.68
WMA.009133	0	Water 100 PVC: Nodes -	36.77	10.00	3.68
WMA.009134	0	Water 100 PVC: Nodes -	36.77	10.00	3.68
WHV.002729	0	Valve Sluice 250-300	36.51	10.00	3.65
WPE.001746	Jones Hill WTP	12 Siteworks - Air Dryer	36.09	10.00	3.61
WPE.001747	Jones Hill WTP	12 Siteworks - Compressor	36.09	10.00	3.61
WMS.G1601479	0	Water Service - 100mm	34.31	10.00	3.43
WMS.G1601551	0	Water Service - 100mm	34.31	10.00	3.43
WMS.G1000102	0	Water Service - 100mm	34.31	10.00	3.43
WMS.G1601519	0	Water Service - 150mm	34.31	10.00	3.43
WMS.G1601550	0	Water Service - 100mm	34.31	10.00	3.43
WMS.G1601559	0	Water Service - 100mm	34.31	10.00	3.43
WMR.G1601479	0	Water Meter - 100mm	32.20	10.00	3.22
WMR.G1601551	0	Water Meter - 100mm	32.20	10.00	3.22
WMR.G1000102	0	Water Meter - 100mm	32.20	10.00	3.22
WMR.G1601519	0	Water Meter - 150mm	32.20	10.00	3.22
WMR.G1601550	0	Water Meter - 100mm	32.20	10.00	3.22
WMR.G1601559	0	Water Meter - 100mm	32.20	10.00	3.22
WMS.G1601468	0	Water Service - 50mm	30.66	10.00	3.07
WMS.G1601461	0	Water Service - 50mm	30.66	10.00	3.07
WMS.G1000123	0	Water Service - 40mm	30.66	10.00	3.07
WMS.G1000127	0	Water Service - 50mm	30.66	10.00	3.07
WMS.G1601354	0	Water Service - 40mm	30.66	10.00	3.07
WMS.G1601382	0	Water Service - 40mm	30.66	10.00	3.07
WMS.G1601464	0	Water Service - 50mm	30.66	10.00	3.07
WMS.G1601364	0	Water Service - 40mm	30.66	10.00	3.07
WMS.G1700133	0	Water Service - 50mm	30.66	10.00	3.07
WMS.G1601373	0	Water Service - 40mm	30.66	10.00	3.07
WMS.G1601384	0	Water Service - 40mm	30.66	10.00	3.07
WMS.G1601337	0	Water Service - 40mm	30.66	10.00	3.07
WMS.G1700134	0	Water Service - 50mm	30.66	10.00	3.07

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1600008	0	Water Service - 50mm	30.66	10.00	3.07
WMS.G1401514	0	Water Service - 40mm	30.66	10.00	3.07
WMS.G1601367	0	Water Service - 40mm	30.66	10.00	3.07
WMS.G1700131	0	Water Service - 50mm	30.66	10.00	3.07
WMS.G1601454	0	Water Service - 50mm	30.66	10.00	3.07
WMS.G1601453	0	Water Service - 50mm	30.66	10.00	3.07
WMS.G1601371	0	Water Service - 40mm	30.66	10.00	3.07
WMS.G1601361	0	Water Service - 40mm	30.66	10.00	3.07
WMS.G1601365	0	Water Service - 40mm	30.66	10.00	3.07
WMR.G1601468	0	Water Meter - 50mm	30.66	10.00	3.07
WMR.G1601461	0	Water Meter - 50mm	30.66	10.00	3.07
WMR.G1601354	0	Water Meter - 40mm	30.66	10.00	3.07
WMR.G1601382	0	Water Meter - 40mm	30.66	10.00	3.07
WMR.G1601464	0	Water Meter - 50mm	30.66	10.00	3.07
WMR.G1601364	0	Water Meter - 40mm	30.66	10.00	3.07
WMR.G1700133	0	Water Meter - 50mm	30.66	10.00	3.07
WMR.G1601373	0	Water Meter - 40mm	30.66	10.00	3.07
WMR.G1601384	0	Water Meter - 40mm	30.66	10.00	3.07
WMR.G1601337	0	Water Meter - 40mm	30.66	10.00	3.07
WMR.G1700134	0	Water Meter - 50mm	30.66	10.00	3.07
WMR.G1600008	0	Water Meter - 50mm	30.66	10.00	3.07
WMR.G1601367	0	Water Meter - 40mm	30.66	10.00	3.07
WMR.G1700131	0	Water Meter - 50mm	30.66	10.00	3.07
WMR.G1601454	0	Water Meter - 50mm	30.66	10.00	3.07
WMR.G1601453	0	Water Meter - 50mm	30.66	10.00	3.07
WMR.G1601371	0	Water Meter - 40mm	30.66	10.00	3.07
WMR.G1601361	0	Water Meter - 40mm	30.66	10.00	3.07
WMR.G1601365	0	Water Meter - 40mm	30.66	10.00	3.07
WMS.G1200321	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000012	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001296	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001913	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001626	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001702	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000013	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001265	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100341	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201116	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001438	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001409	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000032	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000030	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000046	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002095	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202440	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1502361	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1501353	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001820	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001107	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001941	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601532	0	Water Service - 80mm	28.40	10.00	2.84
WMS.G1300167	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1401305	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202511	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1100366	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002058	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002052	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002051	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002054	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201414	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1001378	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100363	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200402	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201403	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201397	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001620	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201401	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201400	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201412	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201307	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201407	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201396	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200428	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201406	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001962	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202508	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001372	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201415	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001375	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202499	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001779	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001373	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001966	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201398	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001777	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001370	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001775	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202473	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200034	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001953	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202474	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200036	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002042	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200396	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200401	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200400	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202495	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202494	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202472	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001385	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200399	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202490	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202483	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001624	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001382	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200471	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200406	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200470	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001389	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001915	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001388	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202477	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200466	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200474	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001912	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001832	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001806	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001827	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200267	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200266	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1001104	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200247	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001836	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200441	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001837	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200281	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200278	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000108	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001785	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001834	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001830	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200364	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1102188	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002085	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200371	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200017	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002039	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100294	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200014	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1401494	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001838	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1401510	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002012	0	Water Service - 20mm	28.40	10.00	2.84
WMS.M0010447	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1200311	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002034	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100203	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002035	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001839	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002032	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201046	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1301563	0	Water Service - 20mm	28.40	10.00	2.84
WMS.M42256	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001290	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001809	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100360	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100361	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200326	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1501214	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1001704	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600763	0	Water Service - 20mm	28.40	10.00	2.84
WMS.M07004091	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1200481	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200270	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001706	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1400929	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001947	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001109	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001101	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200258	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1301404	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200476	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001106	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1502317	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002214	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001741	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200314	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001740	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001743	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001742	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1001747	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002007	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002006	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202435	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1002004	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202426	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1002002	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200272	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001794	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200277	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201801	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200183	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200376	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1102108	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200186	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700026	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1001796	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001790	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1102057	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1401650	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202444	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202422	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001433	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200136	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100135	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100137	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001204	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001208	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100142	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100338	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100142	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100338	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001432	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001299	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100336	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100485	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100095	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100134	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100102	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001292	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001436	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001434	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001687	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001683	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001402	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001404	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001405	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001407	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001406	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001295	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001724	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001727	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1501737	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001268	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001435	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100353	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001431	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100334	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001437	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001202	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100339	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200301	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1001267	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200215	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001261	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001263	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001269	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001266	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001929	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001841	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001842	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000107	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600926	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600924	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600261	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700276	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800658	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202445	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200978	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200979	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200787	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200137	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200980	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200973	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200789	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800340	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200138	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800092	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200975	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500175	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200974	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200139	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200135	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200981	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000045	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000031	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000027	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700006	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1700031	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1600379	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202428	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202431	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001940	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001942	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202429	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200472	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001945	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800174	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1102208	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1501712	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200473	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001949	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001103	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001703	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001105	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202467	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1401892	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1401516	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202433	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1401890	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1401420	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500593	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1200254	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200478	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202452	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1502046	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1502652	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1502045	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200994	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1101930	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600801	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700032	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1800202	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200264	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200269	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500176	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001108	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800461	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600925	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600928	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600927	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700160	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1401440	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1401438	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1003376	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601021	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601020	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601028	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700159	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1601270	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1601268	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202461	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1502678	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1401497	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800009	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1300161	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1601036	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600340	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601022	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600402	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600283	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600282	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600339	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600347	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600345	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600401	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600348	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600280	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601024	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600399	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202449	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1600403	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600279	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600341	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600346	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601025	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600400	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600344	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601045	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601018	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601015	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601288	0	Water Service - 25mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1601016	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601044	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601017	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601289	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601014	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601047	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600287	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601046	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600284	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600288	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600285	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601048	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700322	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600210	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001705	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200251	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200250	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800565	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200427	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001961	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001773	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001770	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001914	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001701	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001383	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200366	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201140	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001910	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001386	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200468	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1101934	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1101949	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202466	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200469	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200479	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202492	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200443	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200265	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200242	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200450	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200446	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200271	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600267	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200318	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200243	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200262	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001952	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001625	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600161	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001918	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202485	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1502395	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202480	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202496	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1102217	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200405	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200398	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202479	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1700030	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1200395	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1200393	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001381	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200411	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202478	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1201136	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1400113	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800390	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1300347	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800538	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200407	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601287	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001959	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001917	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001384	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700162	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200467	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700235	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800550	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200273	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001916	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001911	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700280	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200462	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200463	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1502643	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1600162	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200397	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200464	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001951	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001950	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002059	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1401355	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1601164	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1101943	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200423	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700336	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002044	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002041	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002048	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002045	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200037	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600302	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600303	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200035	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002043	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200032	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200426	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200038	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800319	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002046	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001776	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001960	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201147	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700004	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1200033	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200392	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002049	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001955	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002040	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200409	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1202486	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1002047	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001781	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001958	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002083	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002080	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800357	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800358	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600293	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202484	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001957	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001954	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500171	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500440	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601227	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001965	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001963	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201289	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202342	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200425	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200431	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001371	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001969	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001376	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202510	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200430	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202497	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001374	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002057	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002053	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201377	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202500	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1401414	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202509	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1002050	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500173	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202549	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1100113	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002056	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001772	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200404	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600069	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201404	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001377	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001628	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001629	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201409	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100369	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100364	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001771	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001774	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001964	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200429	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201402	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800423	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202502	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1100371	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202503	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202501	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1002055	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1001623	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001622	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200453	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201405	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001967	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001379	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1502654	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1800027	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200461	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200458	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200424	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601004	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100115	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800303	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100368	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200456	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200422	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200460	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201399	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600803	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001778	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001387	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001919	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600800	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500431	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100121	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200465	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800360	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202488	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202470	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1201379	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202489	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202471	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1003224	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201109	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1500179	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700033	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1300062	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700323	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700344	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202450	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1700029	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1600752	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800338	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202430	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200260	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600802	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202454	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001744	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001948	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200475	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600799	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202493	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200134	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001200	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001201	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800494	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800361	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800493	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001203	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1001207	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001206	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800492	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100357	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800496	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100362	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1102119	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500591	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200783	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100136	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200126	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200784	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100141	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200127	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100355	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001294	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800498	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800499	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001720	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1401418	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800564	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001686	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800563	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200122	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800562	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800501	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800497	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800520	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001688	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001728	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001684	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001726	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100354	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001685	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100333	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200131	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001680	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001297	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200300	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100359	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100358	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1401995	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200123	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200130	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200790	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200782	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700107	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800464	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100098	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800463	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100096	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200786	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100099	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800495	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100093	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001291	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001682	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201283	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200785	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100094	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1100138	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200791	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100139	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001430	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200125	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002030	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001408	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1401474	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100335	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200129	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800266	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001439	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200788	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800108	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001262	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100486	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202643	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800384	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001992	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100301	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100337	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1101925	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100340	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200976	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200977	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200132	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201166	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001700	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600979	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201276	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700357	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001709	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200255	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202427	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001100	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001746	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1501817	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202451	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1600130	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200313	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001745	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001708	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1102131	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201295	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200187	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001707	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001748	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001802	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001749	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1003429	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001805	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200190	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800305	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001823	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001829	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1003423	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001807	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001828	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001792	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001799	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1202434	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1601228	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001798	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201191	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200447	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002005	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202453	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200182	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001821	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001784	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200230	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100488	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200225	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200237	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002033	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100299	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200229	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600362	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1401445	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600363	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100300	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500177	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002031	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002011	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200378	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100298	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100204	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202439	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200377	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800391	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001995	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200363	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001998	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002038	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200370	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200365	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002018	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200368	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001831	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200369	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200241	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600885	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001997	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800285	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200015	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200019	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200235	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500178	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002015	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500606	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1201123	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200279	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600433	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202438	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1600432	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200302	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601042	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100492	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001786	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200227	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1200236	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100489	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100208	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200362	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100491	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100295	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200238	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202459	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200439	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200239	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001991	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000115	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100206	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200231	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001994	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100293	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800286	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001833	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201124	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200445	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001996	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201119	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200222	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200374	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200367	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600140	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100207	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200381	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100205	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200373	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001993	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200224	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1401329	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800359	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200380	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002088	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200375	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1102142	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100211	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500172	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500180	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201112	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1800422	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200303	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1003200	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200448	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600272	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001803	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001788	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600286	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100297	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201120	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200233	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200240	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201122	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001660	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201115	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1501349	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1501350	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1201125	0	Water Service - 25mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1200316	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201111	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200451	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100212	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202457	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200319	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100296	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100210	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700321	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700343	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700324	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700320	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200379	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200312	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800018	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1600018	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001783	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001789	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001800	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200315	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201141	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200320	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700028	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1401328	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201108	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1201117	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200232	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200234	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202437	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1201110	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202437	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1201110	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1100302	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002017	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200133	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201118	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1600980	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200309	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600429	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201047	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200310	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800525	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002019	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1100342	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200307	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600107	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600371	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200308	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600880	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202425	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200433	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202442	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202443	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001797	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200021	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600171	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600044	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202432	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202447	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202419	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1601310	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1002091	0	Water Service - 25mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1200248	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200249	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202455	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200246	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200244	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202460	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1100484	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001787	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1502044	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200016	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001801	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202436	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1000132	0	Water Service - 80mm	28.40	10.00	2.84
WMS.G1201228	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001822	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001824	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202465	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202464	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202423	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1202441	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1102229	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1201067	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1201066	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200329	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202458	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1600337	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200327	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200323	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201113	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200322	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202421	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1002240	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1800302	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200324	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202463	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1100209	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201068	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200325	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202424	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200435	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202446	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1001791	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202420	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200434	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1500174	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002009	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001795	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201802	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200280	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1202418	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1200438	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200184	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001825	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002008	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600193	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001793	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200436	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1400934	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002001	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002003	0	Water Service - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMS.G1200432	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200437	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200256	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002000	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200191	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1200189	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1101969	0	Water Service - 32mm	28.40	10.00	2.84
WMS.G1001638	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1700164	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1700152	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1601019	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601035	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601023	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601034	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1401352	0	Water Service - 25mm	28.40	10.00	2.84
WMS.G1601038	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600342	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601027	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1601037	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600281	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1600343	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001840	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001927	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000048	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1000028	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001944	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002087	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002086	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002081	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001990	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002084	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002037	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001780	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001999	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002010	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002016	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001782	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002014	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001804	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001598	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1002013	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001826	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1001808	0	Water Service - 20mm	28.40	10.00	2.84
WMS.G1201121	0	Water Service - 25mm	28.40	10.00	2.84
WMS.M1023721	0	Water Service - 20mm	28.40	10.00	2.84
WMR.G1000012	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1000013	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1000032	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1000030	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1000046	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1502361	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601532	0	Water Meter - 80mm	28.40	10.00	2.84
WMR.G1501214	0	Water Meter - 32mm	28.40	10.00	2.84
WMR.G1600763	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1502317	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700026	0	Water Meter - 32mm	28.40	10.00	2.84
WMR.G1501737	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600926	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600924	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600261	0	Water Meter - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1700276	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800658	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1800340	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800092	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1500175	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1000045	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1000031	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1000027	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700006	0	Water Meter - 32mm	28.40	10.00	2.84
WMR.G1700031	0	Water Meter - 32mm	28.40	10.00	2.84
WMR.G1600379	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800174	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1501712	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1401892	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1401890	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1500593	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1502046	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1502652	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1502045	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600801	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700032	0	Water Meter - 32mm	28.40	10.00	2.84
WMR.G1800202	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1500176	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800461	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600925	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600928	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600927	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700160	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1601021	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601020	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601028	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700159	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1601270	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1601268	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1502678	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1800009	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1601036	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600340	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601022	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600402	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600283	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600282	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600339	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600347	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600345	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600401	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600348	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600280	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601024	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600399	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600403	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600279	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600341	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600346	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601025	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600400	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600344	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601045	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601018	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601015	0	Water Meter - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1601288	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1601016	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601044	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601017	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601289	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601014	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601047	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600287	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601046	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600284	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600288	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600285	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601048	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700322	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600210	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800565	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600267	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600161	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1502395	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1700030	0	Water Meter - 32mm	28.40	10.00	2.84
WMR.G1800390	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800538	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601287	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1700162	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1700235	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800550	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700280	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1502643	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1600162	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601164	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700336	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1002044	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600302	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600303	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800319	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700004	0	Water Meter - 32mm	28.40	10.00	2.84
WMR.G1800357	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800358	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600293	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1500171	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1500440	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601227	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1500173	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600069	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800423	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1502654	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1800027	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1601004	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800303	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600803	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600800	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1500431	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800360	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1500179	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700033	0	Water Meter - 32mm	28.40	10.00	2.84
WMR.G1700323	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700344	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700029	0	Water Meter - 32mm	28.40	10.00	2.84
WMR.G1600752	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800338	0	Water Meter - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1600802	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600799	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800494	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800361	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800493	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800492	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800496	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1500591	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800498	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800499	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800564	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800563	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800562	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800501	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800497	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800520	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700107	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800464	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800463	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800495	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800266	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800108	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800384	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600979	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700357	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1501817	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1600130	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800305	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601228	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1600362	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1401445	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600363	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1500177	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800391	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600885	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800285	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1500178	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600433	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600432	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601042	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800286	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600140	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800359	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1500172	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1500180	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800422	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600272	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600286	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700321	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700343	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700324	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700320	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800018	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1600018	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700028	0	Water Meter - 32mm	28.40	10.00	2.84
WMR.G1600980	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600429	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800525	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600107	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600371	0	Water Meter - 20mm	28.40	10.00	2.84

Asset Number	Parent Asset Name	Asset Name	Overall Consequence Score	Probability of Failure Score	Overall Asset Criticality Score
WMR.G1600880	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600171	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600044	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601310	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1502044	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600337	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1800302	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1500174	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600193	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1400934	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1700164	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1700152	0	Water Meter - 25mm	28.40	10.00	2.84
WMR.G1601019	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601035	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601023	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601034	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601038	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600342	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601027	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1601037	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600281	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1600343	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1000048	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.G1000028	0	Water Meter - 20mm	28.40	10.00	2.84
WMR.M1023721	0	Water Meter - 20mm	28.40	10.00	2.84
CIV.000973	Gympie Sewerage Treatment Plant	01c Inlet works - Coating	27.82	10.00	2.78
WHV.005748	0	Valve Sluice 080-150	26.74	10.00	2.67
WHV.005750	0	Valve Sluice 080-150	26.74	10.00	2.67
WHV.005762	0	Valve Sluice 080-150	26.74	10.00	2.67
WHV.005772	0	Valve Sluice 080-150	26.74	10.00	2.67
WHV.005784	0	Valve Sluice 080-150	26.74	10.00	2.67
WHV.005786	0	Valve Sluice 080-150	26.74	10.00	2.67
WHV.006001	0	Valve Sluice 080-150	26.74	10.00	2.67
WHV.006047	0	Valve Sluice 080-150	26.74	10.00	2.67
WHV.006052	0	Valve Sluice 080-150	26.74	10.00	2.67
WHV.006081	0	Valve Sluice 080-150	26.74	10.00	2.67
WHV.006082	0	Valve Sluice 080-150	26.74	10.00	2.67
WHV.002120	0	Fire Hydrant	22.06	10.00	2.21
WHV.002130	0	Fire Hydrant	22.06	10.00	2.21
WHV.002132	0	Fire Hydrant	22.06	10.00	2.21
WHV.002133	0	Fire Hydrant	22.06	10.00	2.21
WHV.002134	0	Fire Hydrant	22.06	10.00	2.21
WHV.002509	0	Fire Hydrant	22.06	10.00	2.21
WHV.002510	0	Fire Hydrant	22.06	10.00	2.21
WHV.002519	0	Fire Hydrant	22.06	10.00	2.21
WHV.002524	0	Fire Hydrant	22.06	10.00	2.21
WHV.002525	0	Fire Hydrant	22.06	10.00	2.21
WHV.002526	0	Fire Hydrant	22.06	10.00	2.21
WHV.002636	0	Fire Hydrant	22.06	10.00	2.21

Appendix D Project Risk Assessment

Adopted Risk Policy

The University of Southern Queensland's current Risk Management Policy and Risk Management Plan (RMP) (V1.1) have been adopted as the risk framework to be used during the research project. The risk assessment matrix of the RMP has been used to ensure assessed risks align with USQ policies.

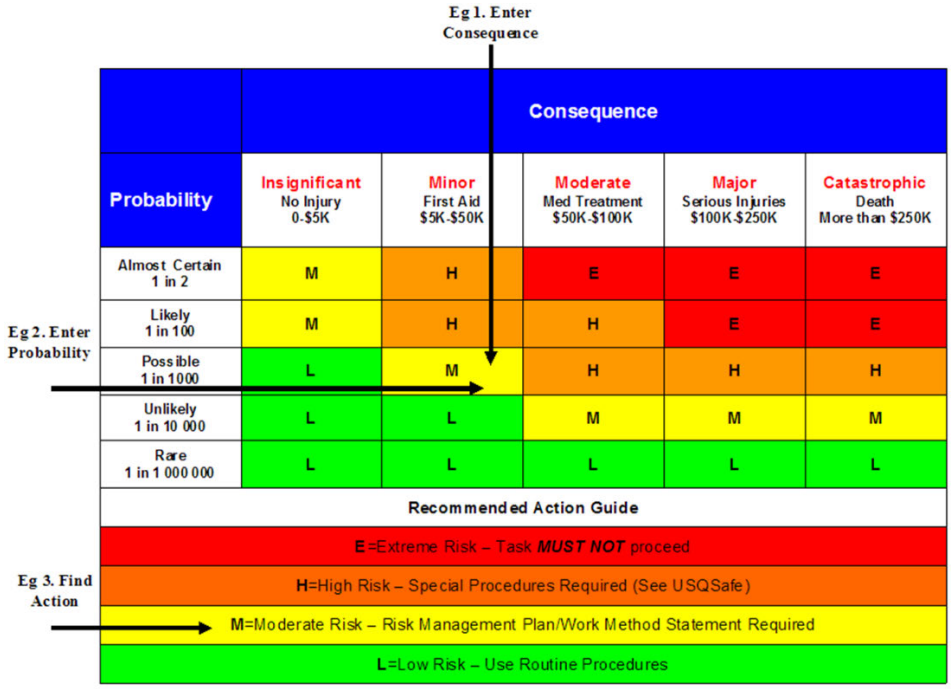

Figure 0-1: USQ Risk Assessment Matrix (USQ 2019)

Examples of consequence and probability from the risk assessment matrix are described in the following tables.

Table 0-1: USQ Consequence Definitions (USQ 2019)

Consequence	Examples of Consequence
Insignificant	No injuries. Minor delays.
Minor	First aid required. Small spill/gas release easily contained within work area. Nil environmental impact.
Moderate	Medical treatment required. Large spill/gas release contained on campus with help of emergency services. Nil environmental impact.
Major	Extensive or multiple injuries. Hospitalisation required. Permanent severe health effects. Spill/gas release spreads outside campus area. Minimal environmental impact.
Catastrophic	Death of one or more people. Toxic substance or toxic gas release spreads outside campus area. Release of genetically modified organism (s) (GMO). Major environmental impact.

Table 0-2: USQ Probably Definitions (USQ 2019)

Probability	Examples of Probability

Almost Certain	The event is expected to occur in most circumstances. Common or repetitive occurrence at USQ. Constant exposure to hazard. Very high probability of damage.
Likely	The event will probably occur in most circumstances. Known history of occurrence at USQ. Frequent exposure to hazard. High probability of damage
Possible	The event could occur at some time. History of single occurrence at USQ. Regular or occasional exposure to hazard. Moderate probability of damage.
Unlikely	The event is not likely to occur. Known occurrence in industry. Infrequent exposure to hazard. Low probability of damage.
Rare	The event may occur only in exceptional circumstances. No reported occurrence globally. Rare exposure to hazard. Very low probability of damage. Requires multiple system failures.

Based on the resulting risk rating, an action is recommended by USQ as per the following table:

Table 0-3: USQ Recommended Action Guide (USQ 2019)

Risk Level	Recommended Action
Extreme (E)	The proposed task or process activity MUST NOT proceed until the supervisor has reviewed the task or process design and risk controls. They must take steps to firstly eliminate the risk and if this is not possible to introduce measures to control the risk by reducing the level of risk to the lowest level achievable. In the case of an existing hazard that is identified, controls must be put in place immediately.
High (H)	Urgent action is required to eliminate or reduce the foreseeable risk arising from the task or process. The supervisor must be made aware of the hazard. However, the supervisor may give special permission for staff to undertake some high risk activities provided that system of work is clearly documented, specific training has been given in the required procedure and an adequate review of the task and risk controls has been undertaken. This includes providing risk controls identified in Legislation, Australian Standards, Codes of Practice etc.* A detailed Standard Operating Procedure is required. * and monitoring of its implementation must occur to check the risk level.
Moderate (M)	Action to eliminate or reduce the risk is required within a specified period. The supervisor should approve all moderate risk task or process activities. A Standard Operating Procedure or Safe Work Method statement is required.
Low (L)	Manage by routine procedures.

Project Risk Assessment

Site Visits:
As part of the proposed research project, a site visit to various GRC water & sewerage asset facilities and locations may be required for verification or collection of asset data. Facilities such as the water & sewerage treatment plants and pump stations represent high risk zones as they include some of the following hazards:

1. Exposure to plant and vehicle traffic on site (forklifts, delivery trucks, staff)
2. Exposure to machinery and moving objects operating under pressure (pumps, blowers etc.)
3. Exposure to high noise levels from operating machinery (pumps, blowers etc.)

4. Exposure to high voltage electrical infrastructure (switchboards, control panels etc.)
5. Exposure to hazardous chemicals and liquids (fluoride, acids, chlorine gas, raw sewerage)
6. Exposure to large open water tanks without escape measures (bio-basins, clarifiers, aeration basins etc.)

The exposure to these risks can be eliminated or minimised by implementing the following controls:

- Complete a GRC general induction, including a site-specific induction for each location and comply with all procedures and policies
- Wear appropriate PPE (hat/hardhat, eye protection, ear plugs, long sleeved high visibility clothing, safety boots, gloves) in accordance with requirements of the site-specific induction and any Safe Work Method Statements
- Sign in on each separate visit and ensure staff escort available
- Do not attend any location on site where an electrical switchboard is open or work being completed under any circumstances
- Do not enter rooms/compounds housing hazardous chemicals
- Do not attend large open water tanks without an escort and ensure handrails are used at all times

The above risks (after proposed controls) have been summarised and assessed in the following table:

Table 0-4: Site Visit Risk Assessment After Controls Applied

Risk No.	Risk Description	Probability (USQ Rating)	Consequence (USQ Rating)	Risk Rating	Risk Decision
1	Exposure to plant and vehicle traffic on site	Rare	Major	L	Accepted
2	Exposure to machinery and moving objects operating under pressure	Unlikely	Major	M	Accepted
3	Exposure to high noise levels from operating machinery	Unlikely	Moderate	M	Accepted
4	Exposure to high voltage electrical infrastructure	Rare	Major	L	Accepted
5	Exposure to hazardous chemicals and liquids	Rare	Major	L	Accepted
6	Exposure to large open water tanks without escape measures	Rare	Catastrophic	L	Accepted

Project Dissertation Preparation

Health & safety considerations also need to be made regarding the development of the dissertation document. While on first observation there are no obvious physical risks, there are still hazards that need to be controlled. These hazards include:

1. Poor posture and ergonomics leading to pain or injury in back, neck, eyestrain, wrist etc.

2. Illness and metal fatigue from significant project working hours/meeting deadlines, other subject assignment deadlines/exams, real life work requirements and family commitments.
3. Loss of data due to equipment failure, accidental loss or lack of permission to use data.
4. Breakdown in communication with supervisor leading to unsatisfactory submission and rework or failure of the course.

Potential controls for the above hazards are as follows:

- Ensuring working station is set up ergonomically, well-lit and ventilated
- Take regular breaks, stretch and ensure reasonable amount of sleep is achieved each night
- Ensure project work is planned and is achievable within the scheduled timeframe. Reassess and reallocate resources as required.
- Ensure regular backups are made, documents are split to reduce file sizes/corruption and copies are stored on reliable media (i.e. cloud and local hardrives). Do not use USB devices.
- Ensure agreements are made upfront regarding the use of data and keep GRC informed
- Ensure consistent open communication with supervisor and keep on track with agreed schedule

The USQ consequence descriptions don't always align with risks of this nature. Therefore, the consequence for items 3 & 4 in the following table should be viewed with a Major consequence aligning with course failure.

Table 0-5: Project Dissertation Preparation Risk Assessment After Controls Applied

Risk No.	Risk Description	Probability (USQ Rating)	Consequence (USQ Rating)	Risk Rating	Risk Decision
1	Poor posture and ergonomics	Possible	Minor	M	Accepted
2	Illness and metal fatigue	Possible	Minor	M	Accepted
3	Loss of data	Rare	Major	L	Accepted
4	Breakdown in communication with supervisor	Unlikely	Major	M	Accepted

Ongoing Risks

The dissertation produced as part of ENG4111/4112 Research Project forms a professional student research document that can and will end up accessible by University staff and the general public. The content of the dissertation including its source data, intellectual property and findings may be contentious to various parties and therefore risks post-completion also need to be considered. Identified ongoing risks include:

1. GRC data could be taken out of context and seen in a negative way by the public (i.e poor/missing asset data, incorrect costs etc.)
2. GRC unsatisfied with outcomes of project choose not to further develop or implement the framework. Therefore, the ultimate purpose of the study would not be achieved.

Poor execution of the project could produce incorrect or misleading results. If implemented by GRC or other entities this could result in poor asset management practices increasing costs, wasting resources and reducing efficiency.